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Southwestern MEDICINE

OFFICIAL JOURNAL OF THE SOUTHWESTERN MEDICAL ASSOCIATION AND EL PASO COUNTY MEDICAL SOCIETY

October 1955

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Southwestern MEDICINE

VOL. XXXVI OCTOBER, 1955 No. 10

THE PRESIDENT'S COLUMN

Knowing About Health Insurance

By Joseph Bank, M. D., Phoenix

I wonder how many physicians have had the experience of listening to the disappointment of a patient who discovered too late that his health insurance company would not pay the hospital or medical expense he had just incurred. I had that experience recently in several instances in which the patient was insured by firms included in the list of insurance carriers cited by the Government some months ago for unethical practices in the nature of misleading promises or "small print" exceptions. The more I thought about the patients' plight, the more I realized that many people are unaware of the basic principles of good health insurance. This lack of information has not gone by unnoticed. Responsible financial agencies such as the American Bankers Association, Kiplinger's Magazine, and other advisory services have made an effort to educate the public on how to distinguish between good and poor health insurance, giving pointers that may act as a guide to the prospective premium payor.

Dr. Bank

Buyer Beware

The old dictum that the buyer must beware still applies in the sense that the subscriber must look into the insurance he is getting and get the best value for his dollar. He should know that there are three main types of coverage: service benefit contract, straight indemnity contract, and a combination of the two. Group policies are cheaper than individual policies because a group is more likely to be "normal" or unloaded, and also because the wholesale operation reduces the overhead, making the cost about 30 per cent less than when the policy is written on an individual basis. One should not try to insure against routine or predictable expense. It is more practical to insure against possible heavy expense. One hundred per cent coverage is uneconomical. The principle of coinsurance by making a certain amount deductible effects considerable saving.

Several Aids

There are a number of aids in picking the right insurance company. A reputable agent can be helpful. Or one might ask a broker to pick the company. Similarly, a hospital director or doctor may be questioned. A reputation for prompt and honest payment of claims established with friends or acquaintances is a good index. Reading the policy carefully and asking questions and demanding explanations may save regrets at a later date.

One cannot help being impressed by the fact that impartial authorities on health insurance hold up the Blue Cross and Blue Shield as examples of good insurance that the average person can afford. By being familiar with details of these plans the doctor can help the patient, and indirectly himself, when it comes to recommending insurance. Equally important to the patient and the plans, is the familiarity with the rules of the plans on what one may or may not expect in the way of benefits

Costs Vary

It must be understood that the premiums depend upon the cost of hospital operation and physicians. charges and may vary according to localities. Does the Blue Cross always pay for anesthesia? Or for X-rays and laboratory work in or out of a hospital? What medications, if any, are considered extra? Can one expect the Blue Cross to pay for diagnostic studies? Can the patient expect free medication to take home on leaving the hospital? Under what conditions will the Blue Shield pay the surgical bill in entirety? These are simple questions for which the answers are readily available. Yet it is surprising how often patients are disappointed or disgruntled because they did not know the answers.

Doctor Can Aid

The doctor in whom the patient places confidence can do much in helping the patient select a good insurance company, and spare him disappointment during a critical period. If he is asked about Blue Cross and Blue Shield he can honestly endorse them as a good investment. By helping to familiarize the patient with what may or may not be expected as

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CURRENT THERAPY

Anticonvulsant Drugs

By Jack A. Bernard, M. D., El Paso

The therapy of epilepsy becomes more advanced yet more complex. Certain drugs are more effective in one type of seizure than in another and the proper drug or combination of drugs is not an easy problem. Also the ever present danger of serious toxic effects is disturbing. The newer drugs are not urged for the patients who are doing well on the standard anticonvulsants. But for the rare patient who may be uncontrolled they may be very helpful.

The following drugs are described:

Barbiturates: Phenobarbital, Mebaral.

Hydantoin Derivatives: Dilantin, Mesantoin, Thiantoin.

Oxazolidine Derivatives: Tridione, Paradione.

Others: Milontin, Mysoline, Phenurone.

Epilepsy may occur in the form of grand mal, petit mal, psychic equivalents, or combinations of the three. A petit mal attack is a transit loss of consciousness where as grand mal attacks are characterized by convulsions preceded by aura. Psychic equivalents are characterized by amnesia.

For grand mal attacks, the barbiturates, hydantoin derivatives, and Mysoline are effective. For petit mal attacks, the oxazolidine derivatives or Milontin are effective, the latter probably could be tried first because of its low toxicity. For psychomotor attacks, Mysoline and the other grand mal drugs may be tried. Phenurone is a toxic drug that should be used only with the utmost caution.

Grand Mal Attacks

For grand mal attacks, phenobarbital and/or dilantin have been most effective. Phenobarbital is prescribed in ½ to 1½ grains three times daily. Toxic reactions include drowsiness, dizziness, dermatitis, staggering, and changes in behavior.

Mebaral is said to be less toxic and may be used in place of phenobarbital in a dosage twice that of phenobarbital. Drowsiness, fatigability, and dermatitis may occur.

Dilantin six to nine grains daily is also effective in grand mal attacks. It may produce nervousness, sleeplessness, gastric distress, ataxia, or dermatitis. By giving the drug at mealtime, the gastro-intestinal disturbances may be controlled. Gum hypertrophy may be bothersome, but daily massages are helpful, although excision by the dentist may be necessary in some instances.

Mesantoin has the same usage and same toxic effects as dilantin, except that it does not produce gum hypertrophy. It may therefore be used to replace dilantin in such instances and the gums will recede. It should be noted that a number of fatal blood dyscrasias have been noted. Dosage is 0.4 to 1 gram daily.

Side Effects

Thiantoin is similar to dilantin with the side effects of itching, ataxia, nystagmus, dizziness, nausea, vomiting, gum hypertrophy, and skin rashes. Dosage 0.52 to 1.4 grams daily.

Petit mal attacks may be controlled by Tridione 0.3 to 2 grams daily. Toxic effects include light sensitivity, skin rashes, nephrosis, and pancytopenia. The appearance of dermatitis, signs of kidney damage, or changes in the blood picture are indications to discontinue the drug. Fatal blood dyscrasias have been reported.

Paradione may be substituted for Tridione. It is thought to be less toxic.

Milontin is effective for petit mal. Toxic reactions are virtually absent. Dosage is 0.3 grams tid, increased 0.3 or 0.6 gram each week until average dosage of 2.4 grams daily reached. Toxic reactions include nausea, dizziness, an occasional skin eruption. and somnolence. The toxic effects occured in 22 per cent of one series as compared to toxicity of 55 per cent for Tridione. Blood and urine examinations were always normal. Milontin therefore seems equal to. if not superior to Tridione and has the advantage of being relatively nontoxic.

Convulsion Control

Mysoline has also shown considerable efficacy in the control of convulsions, and seems to be of some value in psychomotor seizures. Dosage is 1 gram daily to (0.5 gram to 2 grams daily). The patient should be started on ½ tablet (125 mg.) daily, increased by ½ tablet daily until he is taking 0.5 gram to 2 grams daily. Toxic effects include nausea, vomiting. dizziness. somnolence, ataxia, and in some instances psychiatric disturbances. "Idiosyncrasy" has been reported: ½ to 1 hour after the initial whole or ½ tablet, patient may develope an acute attack of drowsiness, weakness, drunkenness, headache, nausea, vomiting, and diplopia.

Phenurone has been used in patients who have not responded to other anticonvulsant drugs. Some have found it effective in controlling psychomotor attacks. However, it has been shown to be extremely toxic, causing fatal hepatitis and aplastic anemia.

Summary

In summary, new drugs are described in the treatment of epilepsy that may be helpful for the rare

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APHORISMS and MEMORABILIA

Truths and Concepts Concerning Prolonged Fevers*

By Andrew M. Babey, M. D., Las Cruces, N. M.

1. "In the vast majority of patients with psychogenic fever the temperature does not rise above 100°." Chester S. Keefer & Samuel E. Leard; "Prolonged and Perplexing Fevers;" *Little Brown & Co.*, 1955, P. 17.

2. "In hot climates some men are known to excrete over 9.5 liters of sweat during a work period. On the basis of 5 liters of sweat to 42.5 Gm. of salt, established by Hibbard, this means a salt loss of nearly 81 Gm." C. S. Keefer & Samuel E. Leard; *loc. cit.*, P. 36.

3. "When diarrhea is present, clubbing of the fingers may suggest ulcerative colitis." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 42.

4. "Splenomegaly with fever and leukopenia suggests enteric fever, brucellosis, malaria, or aleukemic leukemia or kala-azar." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 43.

5. "An enlarged liver with fever should suggest a liver abscess or amebic hepatitis." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 43.

6. "The umbilicus should be examined for signs of a metastatic tumor or a fistula. Intra-abdominal tumors may metatasize to the umbilicus, and fistulae may occur in chronic peritonitis due to tuberculosis or pneumococcal infection." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 43.

7. "A high diaphragm with restriction of movement may give the clue to the presence of a liver abscess. When the diaphragm fails to move and is high the diagnosis of subphrenic abscess is suggested." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 45.

High Globulin

8. "A high globulin is found in cirrhosis of the liver, multiple myeloma, lupus erythematosus, Boeck's sarcoid, periarteritis nodosa, and some chronic infections." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 46.

9. "An increased acid or alkaline phosphatase in the absence of jaundice may suggest a neoplasm." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 46.

10. "Of all the infections which may cause prolonged fever of obscure origin, tuberculosis is by far the commonest." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 51.

11. "The most likely places for tuberculosis to focalize and give origin to prolonged and obscure fever with few or no localizing signs are the lymph nodes (bronchial or abdominal), the pericardium, and the bones." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 51.

12. "It must be remembered that in about 10 per cent of cases tuberculosis is found localized below the diaphragm, which makes this disease difficult to establish by the usual x-ray or physical examination." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 51.

13. "Of the local septic infections causing prolonged fever, bacterial endocarditis is the commonest. There are rare cases of sepsis in which the patient dies before the vegetations on the valves have caused ulceration or in which they are localized on the aortic wall (endaortitis) without endocarditis. The latter localization is seen occasionally in coarctation of the aorta." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 64.

14. "Other cases of bacterial endocarditis causing fever of obscure origin are those without bacteremia. This situation is sometimes encountered when the vegetations are located on the valves of the right side of the heart or when the lesions are fibrosing so that only a very few organisms get into the circulating blood. The latter condition is occasionally encountered in patients with fever which has persisted despite the giving of large amounts of penicillin." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 65.

Bacterial Endocarditis

15. "It may be said that whenever a patient has a persistent low-grade fever and constitutional symptoms of an infection with the signs of valvular heart disease with or without congestive heart failure, progressive renal failure, anemia with splenomegaly, or embolic phenomena, a bacterial endocarditis must be strongly suspected." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 65.

16. "Rarely one encounteres cases of bacterial endocarditis in which there are no signs of valvular disease at any time during the course of the disease. In most cases, however, these signs appear if the patient survives six weeks or longer. The cases without heart murmurs are almost invariably those of infection of previously normal heart valves, especially when the endocarditis is acute and the infection is of relatively short duration, so that the heart valves do not become insufficient through destruction. As a general rule the endocarditis in these cases is only a part of a more widespread infection with many

*It will be noted that all excerpts in this month's contribution are from the monograph by Keefer & Leard, "Prolonged and Perplexing Fevers," Little, Brown & Co., 1955. This is an unusually useful book with numerous well documented cases. We recommend it for careful study and frequent reference.

metastases, or it occurs as a complication of some chronic disease, such as cirrhosis of the liver, ulcerating tumors of various organs, or leukemia." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 65-66.

17. "Air is present in a subphrenic abscess in only about 20 per cent of cases. Its presence is diagnostic but its absence is not." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 75.

18. "The commonest causes of infection in the portal area producing abscess are amebiasis and appendicitis." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 74.

19. "Prolonged fever may be associated with stones in the common bile duct without jaundice and with no attacks of biliary colic. It is well to consider this possibility in patients with recurrent chills and fever and to concentrate attention on the biliary tract. Duodenal drainage and a search for cholesterol or bilirubin crystals may aid in the preoperative diagnosis." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 79.

20. "90 per cent of all subphrenic abscesses are on the right side." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 85.

Empyema

21. "Abscesses beginning about the upper pole of the kidney frequently extend upward, perforate the diaphragm, and produce empyema. Empyema from perinephric abscesses is less frequent than that from intraperitoneal subphrenic abscesses. Empyema of obscure origin, especially if the organisms are staphylococci or colon bacilli, should immediately arouse suspicion of an infection below the diaphragm extending into the pleural cavity." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 94.

22. "When an abscess of the kidney develops insidiously, the organ may become enlarged and produce a palpable mass that suggests a tumor. This mass may move freely with respiration and there may be very little tenderness over it." C. S. Keefer & S. S. Leard; *loc. cit.*, P. 94.

23. "When an abscess develops from the lower pole of the kidney, a mass may be felt in the region of the appendix or in the subhepatic region, and it may be mistaken for an appendiceal abscess or an abscess about the gallbladder." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 94.

24. "An infrequent cause of prolonged fever often associated with chills and having few local signs is thrombophlebitis of the deep tonsillar veins. The important features in diagnosis are as follows. During or following an attack of acute tonsillitis there is an abrupt onset of chills, fever, and sweats, and tenderness at the angle of the jaw with moderate enlargement of the lymph nodes. In some cases the tenderness extends along the anterior margin of the sternomastoid muscle. There are often signs of metastases in the lungs, joints, or subcutaneous tissues." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 109.

25. "Infections of bone may cause fever with few other symptoms or sepsis of local bone disease. A variety of micro-organisms may be implicated, including staphylococci, B. melitensis, tubercle bacilli, and typhoid, paratyphoid, and colon bacilli. In all cases x-ray examination of the bones is essential. The spine, pelvis, and long bones are involved most often." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 116.

Obscure Fever

26. "In any case of obscure fever, the mediastinum should be examined by x-ray for enlarged lymph nodes, tumors, or infections. The diseases of the lymph nodes that cause fever are tuberculosis, Hodgkin's disease, and occasionally sarcoid. The infections are usually abscesses in the posterior mediastinum either pyogenic or tuberculous in origin, or empyema of the mediastinal pleura secondary to pneumococcal or streptococcal infection of the lungs." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 116.

27. "The diagnosis of histoplasmosis should be suspected in any patient with one of the following clinical combinations:

(1.) Acute or chronic pulmonary infection with fever.

(2.) Fever, hepatosplenomegaly, lymphadenopathy, anemia, and leukopenia.

(3.) Ulcerative enteritis.

(4.) Local abscesses of the skin with or without oronasal cavity ulceration.

(5.) Destructive disease of the adrenals (Addison's disease)." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 143.

28. "Fever is a frequent accompanying feature of malignant tumors, with or without necrosis or superimposed infection. It may be low-grade in character, and it may be remittent or intermittent, with or without chills." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 157.

29. "For some reason fever seems to be particularly common in five groups of tumors; Tumors of the kidney, tumors of the gastrointestinal tract (stomach, colon, liver, and less often, pancreas), retroperitoneal tumors (especially Hodgkin's disease and sarcoma), tumors of the lungs, and tumors of bones." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 157.

30. "When a patient has had a tumor removed and later develops fever, a recurrence of the tumor or metastatic disease must be considered." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 159.

31. "It is well to remember that metastatic tumors to the liver originate most often in the organs drained by the portal venous system (stomach, colon, and pancreas)." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 165.

32. "In the extraportal system, primary tumors metastasizing to the liver arise most often in the breast, lung, and eye (melanosarcoma)." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 166.

Tumors of Bone

33. "Tumors of bone, either primary or metastatic, not infrequently cause fever, and in many instances it is periodic or relapsing. The two primary tumors causing fever most frequently are Ewing's sarcoma and multiple myeloma." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 168.

34. "The type of Hodgkin's disease that causes obscure fever is localized in the medistinum or retroperitoneal or mesenteric lymph nodes, with or without the simultaneous involvement of the liver, spleen, and bone marrow." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 177.

35. "There is nothing characteristic about the pattern of the temperature in patients with fever associated with tumors. The fever may be continuous, remittent, relapsing, or intermittent." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 179.

36. "Fever is more frequent when tumors have metastasized to the liver or to the bones." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 179.

37. "When fever recurs some weeks, months, or years after removal of a primary tumor, then metastases to the liver or bone should be suspected; also, if fever persists after removal of a primary tumor, metastases are usually present." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 179.

38. "Fever is a common occurrence during the course of many of the diseases of the blood-forming organs. In most cases this feature is well recognized as part of a progressive illness, together with the other features characteristic of the disease. In other cases fever may be the only and main symptom of the disorder for many weeks or several months before other symptoms or signs appear. The fever may be continuous, remittent, or relapsing." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 189.

Carbon Monoxide Intoxication

39. "It is well known that following a period of unconsciousness from carbon monoxide intoxication patients frequently run low-grade or even high fevers for several weeks as a result of small focal brain hemorrhages." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 200.

40. "The suspicion of disseminated lupus erythematosus should be greatest in any young woman with a consistent leukopenia, especially if occasional red cells are found in the urine during clinical exacerbations in a febrile illness. The lymph nodes may be enlarged." C. S. Keefer & S. E. Leard; *loc. cit.* P. 204.

41. "Periarteritis nodosa, more recently called panarteritis nodosa, also may first present itself as an obscure fever. It is commoner in males than in females and occurs most frequently between the ages of 10 and 40. Leukocytosis is the condition which helps differentiate periarteritis nodosa from disseminated lupus erythematosus where the bone marrow is depressed." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 205.

42. "It is customary to assume that unless there are complications, cirrhosis of the liver is usually an afebrile disease. Immediately one thinks of many exceptions to this statement. Indeed, in some cases fever, either continuous or recurrent, may be an outstanding feature of the illness. Unless it is recognized as such, it may lead to an incorrect diagnosis." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 208.

43. "The cases of liver disease in which fever is an outstanding feature and in which the diagnosis may be obscure for a long period of time are those in which there is a splenomegaly without any of the other accompanying signs of cirrhosis of the liver. These cases are not uncommon, and fever in recurrent bouts is very conspicuous in some instances. As a rule, in these cases the fever is not accompanied by leukocytosis, but leukopenia present during the afebrile period may persist." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 209.

Superimposed Carcinoma

44. "It is scarcely necessary to recall that fever may indicate a superimposed carcinoma of the liver in a patient with cirrhosis or some intercurrent complication." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 209.

45. "The infections that may occur during the course of cirrhosis of the liver, causing fever that is difficult to interpret, are chronic pyelonephritis, bacterial endocarditis with negative blood cultures and without murmurs, and chronic cholangitis." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 210.

46. "Patients with liver disease may have recurrent attacks of abdominal pain with an increase in jaundice simulating cholelithiasis. At operation no stones are found. These are cases of so-called Pseudogallenstein colic of the German school. Their cause is obscure." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 210.

47. "When there are signs of sepsis without positive blood cultures and without localized signs of infection, the tricuspid or pulmonic valve may be suspected. In these cases embolic phenomena in the lesser circulation, such as pulmonary infarctions or metastatic bronchopneumonia, may aid in the diagnosis of bacterial endocarditis. However, without the presence of a valvular murmur the diagnosis may not be possible, inasmuch as the primary focus for the septic infection may be in the pelvic or other veins and give rise to pulmonary metastases without endocarditis." C. S. Keefer & S. E. Leard; *loc. cit.*, P. 64.

MEETINGS

Oustanding Speakers Scheduled for Southwestern Medical Meeting

An exceptional response to announcement of plans for the 37th annual meeting of the Southwestern Medical Association in Phoenix, Arizona, November 16-18, has been reported by Dr. Joseph Bank, President of the Association.

Headquarters for the meeting will be in the Westward Ho Hotel in Phoenix.

Speakers

Speakers at the meeting will be:

Dr. H. L. Bockus, Professor of Medicine at the University of Pennsylvania School of Medicine.

Dr. L. Kreer Ferguson, Professor of Surgery at the University of Pennsylvania School of Medicine.

Dr. William E. Ehrich, Professor of Pathology at the University of Pennsylvania School of Medicine.

Dr. Edward H. Rynearson, Chairman of Sections at the Mayo Clinic.

Dr. Byrl R. Kirklin, Assistant Professor of Surgery at the Mayo Foundation, University of Minnesota.

Dr. I. V. Ponseti, Associate Professor of Orthopedic Surgery in the University of Iowa Department of Orthopedic Surgery, University Hospital, Iowa City, Iowa.

Dr. J. Walter Wilson, Associate Professor of Dermatology at the University of Southern California School of Medicine.

Dr. John Webb, Professor of Pharmacology and Toxicology at the University of Southern California School of Medicine.

Dr. Reginald H. Smart, Associate Professor of Clinical Medicine at the University of Southern California School of Medicine.

Dr. Hans H. Hecht, Associate Professor of Medicine at the University of Utah College of Medicine.

Dr. Kenneth Roeper (Opthalmology) at the Northwestern University School of Medicine.

Three Subjects

Drs. Bockus, Ferguson and Ehrich will each speak on the following three subjects: Regional Enteritis and Enterocolitis, Medical and Surgical Aspects; Orientation of Massive Bleeding from the Upper Alimentary Tract, Medical and Surgical Aspects; Experience with Subtotal Gastrectomy in the Management of Peptic Ulcer — Post-Gastrectomy Sequelae, Medical and Surgical Aspects.

Dr. Bockus will also speak on Prevention of Malignant Neoplasm of the Gastrointestinal Tract. Dr. Ferguson will present a paper on Prophylaxis and Treatment of Complications Following Biliary Tract Surgery. Dr. Ehrich will also speak on The Adrenals.

Other Speakers

Other speakers and their subjects, in addition to those announced in the September issue of SOUTHWESTERN MEDICINE, are Dr. Hecht, Essential Pulmonary Hypertension, How to Evaluate Polycythemia; Dr. Webb, The Effect of Drugs on Pulmonary Circulation and on the Control of Respiration, The Newer Drugs for Anesthesia, and The Action of Drugs in Clinical Use for Heart Disease other than Digitalis; Dr. Smart, Clinical Observations on the Value of Pulmonary Function Studies, The Pneumoconioses and Pulmonary Function — Industrial Insurance Considerations.

A complete program for the meeting will be carried in the November issue of SOUTHWESTERN MEDICINE.

Psychosomatic Medicine Meeting in New York

The Academy of Psychosomatic Medicine will hold its Second Annual Meeting on Oct. 6-8 at the Plaza Hotel in New York City. The subject of this year's Scientific Program is "The Psychosomatic Aspects of Drug Administration." There is no registration fee. Guests may attend the Banquet.

Gastroenterological Convention

The Annual Convention of the American College of Gastroenterology will be held at The Shoreland in Chicago, Ill., Oct. 24-26.

In addition to interesting individual papers on gastroenterology and allied fields, the program will include a panel discussion on "Peptic Ulcer" with Dr. Clifford J. Barborka as moderator. There will be scientific as well as commercial exhibits.

The annual course in postgraduate Gastroenterology, under the personal direction of Dr. Owen H. Wangensteen of Minneapolis, Minn., and Dr. I. Snapper of Brooklyn, N. Y., will be given on October 27-29, at The Shoreland. Participating in the course will be a distinguished faculty from the various medical schools.

Southwest Obstetrical and Gynecological Society to Meet in El Paso October 28-29

The fifth annual meeting of the Southwest Obstetrical and Gynecological Society will be held in El Paso Oct. 28 and 29, with headquarters in the Hotel Paso del Norte.

Members of the society are physicians from southern California, Nevada, Arizona, New Mexico and El Paso County in Texas. Dr. Celso C. Stapp of El Paso is president.

Dr. Celso C. Stapp

Scientific presentations will be made by Dr. Arthur T. Hertig, Shattuck Professor of Pathological Anatomy and Professor of Pathology in the Harvard Medical School; Dr. Carl T. Javert, Associate Professor of Obstetrics and Gynecology at the Cornell University Medical College; Dr. Richard Torpin, Chairman of the Department of Obstetrics and Gynecology at the Medical College of Georgia; Dr. Louis W. Breck of El Paso, Orthopedic Surgeon, who is currently President of the Association of Bone and Joint Surgeons; and Dr. Robert F. Boverie, El Paso Radiologist.

A native of Minneapolis, Dr. Hertig received his B. S. from the University of Minnesota in 1928 and his M. D. from Harvard University in 1930. He was with the Rockefeller Foundation in Peking, China in 1925 and 1926. He took his training in Pathology at the Peter Bent Brigham Hospital in Boston, in the Lying-In-Hospital and Childrens Hospital from 1930 to 1933. He was a National Research Fellow in Embryology at the Carnegie Institute of Washington in 1933 and 1934.

Harvard Medical School

Dr. Hertig has been with the Harvard Medical School since 1931, and with the Boston Lying-In-Hospital since 1934. At the Boston Lying-In-Hospital, he was Senior Obstetrician from 1946 to 1950 and has been the Pathologist there since 1939.

He has been the Pathologist at the Free Hospital for Women (Brookline, Massachusetts) since 1938. He has been acting chairman of the Department of Pathology since 1950 at the Boston Lying-In-Hospital and at the Free Hospital for Women.

Dr. Hertig is a Consultant in Pathology to the Armed Forces Institute of Pathology and a Consultant in Obstetrics and Gynecology and Pathology to the U. S. Navy. He is a recipient of the American Gynecological Society Award for fundamental research on human reproduction. He is a Diplomate of the American Board of Obstetrics and Gynecology and the American Board of Pathology.

Dr. Javert was born in Depew, New York. He attended the University of Buffalo, College of Arts and Sciences and the School of Medicine, receiving his M. D. degree in 1932. He served for three years at the Buffalo General Hospital as intern, resident in Gynecology and Proctology and in Pathology. Following this, he was on the resident staff of the New York Lying-In-Hospital for an additional five years, completing the residency in 1940.

Cornell Medical College

Dr. Javert then served as Instructor in Obstetrics and Gynecology at Cornell University Medical College and Assistant Obstetrician and Gynecologist to the New York Hospital until 1942. During World War II, he served in the Army Air Force emerging with a rank of Lt. Col. in 1946.

Dr. Javert is a Fellow of the A. M. A., the American College of Surgeons, and the American Academy of Obstetrics and Gynecology. He is a Diplomate of the American Board of Obstetrics and Gynecology.

Dr. Javert's published writings include studies on X-Ray pelvimetry, the mechanism of labor in transverse positions of the vertex, pain studies on labor, hemorrhagic disease of the newborn, various nutritional studies in pregnancy, abnormal vaginal bleeding, retroversion and erythroblastosis; the Rh factor and red infarcts of the placenta, repeated abortion, sterilization, endometriosis, arrhenoblastoma, cancer of the tube, pelvic lymphatics in females, lymphatic spread of benign and malignant endometrium, endometrial cancer, cervical cancer and serious cancer of the ovary. At the present time he is completing a monograph based on 2,000 spontaneous abortion specimens.

Medical College of Georgia

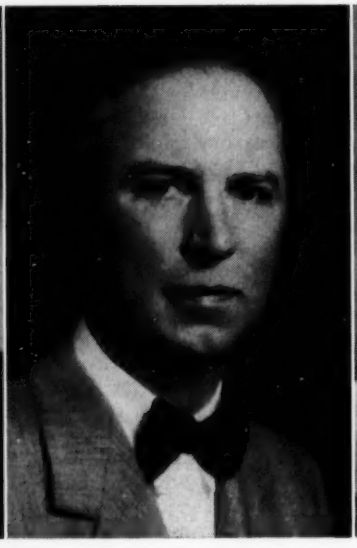
Dr. Torpin, a native of Nebraska, received his A. B. degree from Nebraska Wesleyan and his M. D. degree from Rush Medical School. He engaged in rural practice in Montana and took graduate training in Chicago. He became Instructor of Obstetrics and Gynecology at Rush Medical School and was an assistant to Dr. Carey Culberson at Cook County Hospital.

Since 1936, he has been chairman of the Department of Obstetrics and Gynecology at the Medical College of Georgia. He is author of "Treatise of Obstetric Labor" and his studies have been directed toward human placentation, human pelvimetry, physiology of labor and toxemia of pregnancy.

(Complete Program on Following Pages)

Complete Program of the Southwest Obstetrical and Gynecological Society Meeting

Dr. Hertig



Dr. Javert

Dr. Torpin

Guest Speakers

ARTHUR T. HERTIG, M. D.
Shattuck Professor of Pathological Anatomy and Professor of Pathology, Harvard Medical School.

CARL T. JAVERT, M. D.
Associate Professor of Obstetrics and Gynecology, Cornell University Medical College; Attending Obstetrician and Gynecologist to the New York Hospital, and Pathologist to the New York Lying-In Hospital.

RICHARD TORPIN, M. D.
Chairman of the Department of Obstetrics and Gynecology, Medical College of Georgia.

LOUIS W. BRECK, M. D.
Orthopedic Surgery, El Paso.

ROBERT F. BOVERIE, M. D.
Radiology, El Paso.

Friday, October 28, 1955

8:00 Meeting of the Council of the Society (Breakfast)

8:30 Meeting of the Nominating Committee

9:00 Registration Opens

9:45 Call to Order
Dr. Celso C. Stapp, President, El Paso
Announcements and Introduction of Guest Speakers

SCIENTIFIC PROGRAM — Morning Session

Presiding-------Dr. Hollis Brainard, Tucson

10:00 "Early Human Ova; Good, Bad, and Indifferent" — Dr. Arthur T. Hertig

11:00 "Prognosis and Treatment of Endometrial Cancer" — Dr. Carl T. Javert

ANNUAL BUSINESS MEETING

12:00 Presiding ----------Dr. Stapp

LUNCHEON AND ROUND TABLE

12:30 Presiding------Dr. Jesse A. Rust, San Diego

SCIENTIFIC PROGRAM — Afternoon Session

Presiding-------Dr. William Buster McGee, San Diego

2:00 "Low Back Pain in the Female from the Orthopedic Standpoint"
Dr. Louis W. Breck, El Paso

3:00 "Correlation of Placental Anomalies with Spontaneous Abortion or Premature Separation" — Dr. Richard Torpin

4:00 "Hydatidiform Mole — Chorio-Epithelioma Problem" — Dr. Arthur T. Hertig

EVENING

6:30 Cocktail Party — Dinner to Follow
Hotel Paso del Norte

Saturday, October 29, 1955

SCIENTIFIC PROGRAM — Morning Session

Presiding----Dr. Preston T. Brown, Phoenix

9:00 "X-Ray Treatment of Sterility and Amenorrhea" — Dr. Robert F. Boverie, El Paso

10:00 "Two Thousand Spontaneous Abortions" Dr. Carl T. Javert

11:00 "Physiology of Labor" — Dr. Richard Torpin

LUNCHEON MEETING

12:30 Presiding----------Dr. Louis A. McRae, Jr., Albuquerque

SCIENTIFIC PROGRAM — Afternoon Session

Presiding----Dr. Zeph B. Campbell, Phoenix

2:00 "Contrasting Study of Cervical and Endometrial Carcinoma" — Dr. Arthur T. Hertig

3:00 "Etiology and Therapy of Toxemia of Pregnancy and Eclampsia" — Dr. Richard Torpin

4:00 "Pathologic Classification of Cervical Carcinoma" — Dr. Carl T. Javert

EVENING

7:00 Party in Juarez

Sunday Afternoon

Bullfight — Plaza de Toros, Juarez, Mexico

There will be a program of social activities for The Ladies

Convention Committee

Clement C. Boehler, M. D. — Gray E. Carpenter, M. D.
LeRoy J. Bowers, M. D. — Joe S. Galatzan, M. D.
Robert J. Cardwell, M. D. — Erich Spier, M. D.
Jesson L. Stowe, M. D.

NOMINATING COMMITTEE FOR 1955-56 OFFICERS

Preston T. Brown, M. D., Phoenix, *Chairman*
Clement C. Boehler, M. D., El Paso
William Buster McGee, M. D., San Diego
Louis A. McRae, Jr., M. D., Albuquerque
Hermann S. Rhu, Jr., M. D., Tucson

SOUTHWEST OBSTETRICAL AND GYNECOLOGICAL SOCIETY
(Founded 1951, Phoenix, Arizona)

OFFICERS, 1955

President----Celso C. Stapp
Vice President----Jesse A. Rust
President-Elect----Hollis Brainard
Secretary----Zeph B. Campbell
Treasurer----Raymond Jennett

COUNCIL GROUP A

LeRoy Bowers, M. D., Las Cruces
D. Dalton Deeds, M. D., San Diego
Gray E. Carpenter, M. D., El Paso
Robert L. Moore, M. D., Phoenix
Thomas C. Rowley, M. D., Mesa

COUNCIL GROUP B

John E. Gunning, M. D., Imperial County
Howard C. James, M. D., Tucson
Louis A. McRae, M. D., Albuquerque
Donovan Johnson Orange, M. D., Riverside and San Bernardino County
George R. Turner, M. D., San Diego County

El Paso Post-Graduate School to Present Course on Anesthesiology

The next meeting of the El Paso Branch of the University of Texas Post-Graduate School of Medicine will be held October 16 in the El Paso County Medical Society's Turner Home, 1301 Montana Street, starting at 8 a. m. The subject will be "Anesthesiology."

The following physicians will make scientific presentations: Dr. William Derrick, Houston, Texas, "Anesthetic Management of Surgery of the Heart and Great Vessels" and "Anesthesia for Thoracic Surgery;" Dr. Charles R. Allen, Professor of Anesthesiology at the University of Texas School of Medicine, Galveston, Texas, "Acidosis and Alkalosis" and "Poor Position on the Operating Table and its Significance to Anesthesia;" Dr. M. D. Thomas, El Paso, "Local Anesthetic Drug Reactions and Their Treatment" (with demonstrations); Dr. Joseph A. Shugart, El Paso, and Col. Joseph Hornisher, William Beaumont Army Hospital, "Relationship of General Anesthesia with Phylogenetic Layers of the Brain" (demonstration with Electro-Encephalograms); Dr. Jack A. Walker, El Paso, "Adrenal Cortical Steroids as Related to Surgery and Anesthesia;" and Dr. Jack R. Ellis, El Paso, "Pre-Operative Preparation of the Patient for Surgery."

Physicians from West Texas, New Mexico, Arizona and northern Mexico are invited to attend the meeting, for which credit with the American Academy of General Practice will be given. Dr. Ralph H. Homan of El Paso is dean of the El Paso branch of the postgraduate school. Dr. Frank O. Barrett of El Paso is in charge of the October 16th program.

Dr. Nering New President of El Paso Phi Beta Pi Unit

Dr. A. Robert Nering of the El Paso County Medical Society has been elected president of the El Paso Alumni Chapter of Phi Beta Pi, medical honorary fraternity.

Dr. William I. Coldwell was elected secretary-treasurer at the meeting held in the home of Dr. Louis W. Breck, 2726 Richmond St. Retiring officers are Dr. Ben Cooley, president, and Dr. Louis Casavantes, secretary-treasurer.

The meeting also honored 11 El Paso area men who have been accepted as students in freshman classes at various medical schools.

Public Health Meeting

Evaluation of practical experience with the Salk polio vaccine by key figures in its development will be a feature of the 83rd annual meeting of the American Public Health Association and meetings of 40 related organizations in the Kansas City, Mo., Municipal Auditorium, November 14-18.

ORIGINAL ARTICLES

New Drugs in Therapy of Cardiac Arrhythmias

By Antonio Sanabria, M. D., Associate Professor of Clinical Cardiology, Central University of Venezuela; Cardiologic Service, Hospital Vargas, Caracas, Venezuela.

At the present time there are many pharmacologic agents that are capable, in varying degree, of suppressing disturbances of cardiac rhythm. Some of these are well known, while others are still largely in the experimental category. Quinidine has been studied widely, and much has been written about its pharmacology and clinical applications. Since there are certain important limitations attached to its use, it is of interest to investigate new drugs for the treatment of cardiac arrhythmias.

Some three years ago we began such a study. The results of any study of this nature should be interpreted with caution, since many episodes of cardiac arrhythmia cease spontaneously. Sometimes a presumed antifibrillatory drug may be given to a patient with auricular fibrillation, for example, and the arrhythmia does not stop. On the other hand, it may cease owing to mere coincidence.

Antifibrillant Substances

Little is known about the relation of chemical structure to antifibrillatory action. It would be difficult to select a simple chemical structure that could reliably be expected to exhibit this effect. Chemical substances that have antifibrillatory effects are numerous; even simple ions like magnesium and potassium may, under proper circumstances, have antifibrillatory action and be clinically effective. Potassium may suppress extrasystoles provoked by digitalis, and magnesium may interrupt paroxysmal tachycardia induced by strophantus.

It is widely held that in many antifibrillatory substances like procaine and various antihistamines, the activity is related to local anesthetic properties. There is an analogy here with substances of the atropine and quinidine group, which also have local anesthetic activity.

Di Palma and Schultz[1] suggest that the following structure represents a basic minimal configuration for antifibrillatory potency:

$$R_1$$
$$R_2 — N — R_3$$

Here R_1 is usually a methyl or ethyl group and R_2 and R_3 are short carbon chains to which may be added such groups as phenyl or quinoline.

Brodie, Lief and Poet[2] have shown that in the organism procaine breaks up into paraminobenzoic acid and diethylaminoethanol. The latter possesses antifibrillatory activity through its effect on the biochemistry of cardiac contraction and myocardial irritability.

The precise studies of Prinzmefal and his associates[3] have shown that the circus movement theory of auricular fibrillation, as propounded by Lewis,[4] is untenable. They demonstrated that the arrhythmia is produced by the rapid discharge of an ectopic focus in the auricle when the frequency of its discharge reaches the level of fibrillation as determined by the conductivity of the auricular musculature. An antifibrillatory drug would act by depressing the rate of discharge from an ectopic focus, thereby mitigating conduction failure induced by rapid auricular rate.

Probably, antifibrillatory substances depress myocardial irritability by their action on myocardial metabolism, and perhaps they depress primarily the ectopic foci because of the latter's more rapid or altered metabolism. Webb, Saunders and Nakamura[5] have demonstrated that the depression of oxidative mechanisms produced by quinidine affects glycolysis principally, and they believe its pharmacologic effect would be due to this biochemical action. Perhaps many antifibrillatory drugs have this same action. It might be direct as with the potassium ion, which is indispensible to glycolysis; or indirect by improving coronary circulation (papaverine and related drugs); or it may be due to a mixed action.

In general, the antifibrillatory drugs possess the following pharmacologic properties: (a) they augment the refractory period of the myocardium; (b) they inhibit cholinesterase; (c) they depress myocardial excitability; (d) they have a curare-like effect on the terminal plate; (e) in the electrocardiogram they produce prolongation of the PR, QRS and QT segments.

Drugs Used

Table 1 presents the formulas of the drugs used in our study. It will be seen that the tertiary amino structure is present in all cases, excepting chloroguanide, which has several secondary amino groupings. The implications of this fact in relation to the postulate of Di Palma and Schultz is a matter for speculation that is outside the province of this paper.

TABLE I - DRUGS USED IN TREATMENT OF CARDIAC ARRHYTHMIAS

(Tertiary amino nitrogens are in black type)

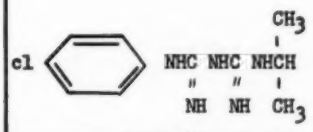
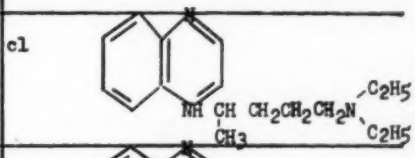
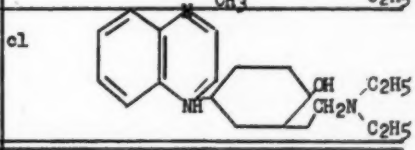
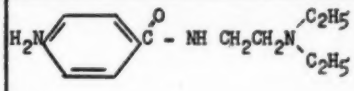
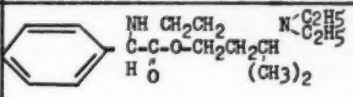
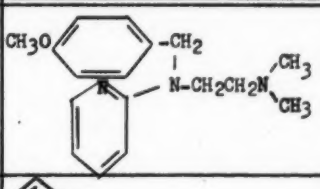
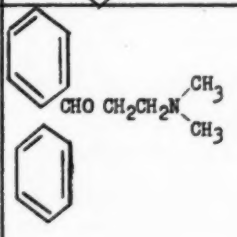
DRUG	AVAILABLE AS:	STRUCTURAL FORMULA
Synthetic Antimalarials Chloroguanide Syn: Paludrine, Proguanil, M4888 1-(p-chlorophenyl)-5-isopropyl-biguanidine	Hydrochloride	
Chloroquine Syn: Aralen, Resochin, Nivaquine B 7-chloro-4-diethylamino-1-methylbutylamine quinoline	Diphosphate	
Camoquine Syn: Amodiaquin, Miaquin, CAM-AQ1 4-(7-chloro-4-quinolylamino)-α-diethylamino-o-cresol	Base	
Myocardial Depressant Procaine amide Syn: Pronestyl p-amino-N-(2-diethylaminoethyl) benzamide	Dihydrochloride	
Spasmolytic, Anticholinergic, Vasodilator Avacan Isoamyl N-(β-diethylaminoethyl) α-aminophenylacetate	Hydrochloride	
Synthetic Antihistamines Pyrilamine Syn: Neo-antergan, 2786 R.P. 2-[(2-dimethylaminoethyl) (p-methoxybenzyl) amino] pyridine	Maleate	
Diphenhydramine Syn: Benadryl 2-(Benzohydroxyloxy)-N,N-dimethylethylamine	Hydrochloride	

TABLE II — RESULTS OF THERAPY WITH ANTIMALARIAL DRUGS

DRUG	DIAGNOSIS	NO. OF CASES	ORAL DOSE	RESULTS	TOXIC SIDE-EFFECTS
Chloroguanide	Multifocal ventricular extrasystole,	13	0.25 Gm. t.i.d.	Suppressed, 8 cases; others discont'd	Nausea, vom.ting,
	Auricular fibrillation	3	0.75 Gm. repeated q. 3 h.	Regular rhythm (1 case) second dose; others discont'd because of toxic effects	epigastralgia frequent severe
Chloroguine	Supraventricular Paroxysmal tachycardia	3	8.4 Gm. up to 16 hrs. Then 0.75-1Gm. daily	11 showed satisfactory response	
	Multifocal ventricular extrasystole	17	0.75-1Gm. daily	Abolished, 10; diminished, 4; failure, 3.	
	Auricular fibrillation	15	Initial, 1 Gm. then 0.5 Gm.	Sinus rhythm restored, 8 cases; failures, 7.	Nausea and vomiting moderate relatively infrequent
Camoquin	Ventricular extrasystole	5	0.6-0.8Gm. daily	Failure. 5.	Nausea

TABLE III — RESULTS OF PROCAINE AMIDE THERAPY

DIAGNOSIS	NO. OF CASES	DOSE	RESULTS	TOXIC SIDE-EFFECTS
Ventricular extrasystole	17 multifocal; 4 unifocal	1 Gm; then 1.2 Gm. q. 4-6 h., by mouth	Suppression, 12; improved, 8; failure, 1	Nausea and vomiting (1 on initial dose)
Ventricular tachycardia	2	1 Gm. i-v very slowly	1 successful, 1 failure	Intense cephalgia, 1
Ventricular tachycardia c̄ myocardial infarction	3	1 Gm. i. m.	All responded favorably	
Auricular fibrillation	6	1 Gm., then 1.2 Gm. q. 6-8 h. by mouth	1 success, 5 failures *	

*In two cases of auricular fibrillation with ventricular extrasystoles, although fibrillation was not abolished, in one case the extrasystoles were completely suppressed and in the other they were appreciably reduced.

TABLE IV — RESULTS OF ANTIHISTAMINE THERAPY

DRUG	DIAGNOSIS	NO. OF CASES	DOSE	RESULTS	SIDE-EFFECTS
Pyrilamine	Multifocal ventricular extrasystole	11	0.6-1Gm. daily by mouth	Abolished, 6; diminished, 3; failed, 2	Drowsiness
Diphen-hydramine	Supraventricular paroxysmal tachycardia	3	200. mg. i-v	arrhythmia disappeared; no fall in B. P.	Transitory dizziness and vertigo; drowsiness.
	Auricular fibrillation	5	200 mg. i-v maintenance 100 mg, tid, by mouth	sinus rhythm re-established, 3.	

Table I

Clinical Material and Method

To study the clinical value of these drugs in cardiac arrhythmias, we have selected only patients who had persistent and frequent extrasystoles, and excluded those in which extrasystole was occasional. This method was used by Otto and Gold[6] to estimate the potency of a drug by its ability to suppress extrasystoles with a single dose. We also used the method described by Lewis and his associates[7] to evaluate antifibrillatory activity in patients with chronic auricular fibrillation. Using precordial derivations, they registered the "f waves," observing whether one dose of the drug under study would produce a lengthening of the f-f interval, which is the same as slowing up the rate of the "circus movement." We also used as a basis for measuring the myocardial activity of the drug the lengthening of the QT interval.

Results

Antimalarials — Several authors have shown that atabrine has marked antifibrillatory properties,[8, 9, 10] indicating that it is at least as effective as quinidine in re-establishing sinus rhythm. Burn and Vane[11] demonstrated experimentally that chloroguanide (Paludrine, Proguanil) is able to stop auricular contraction and that the auricles can beat again if acetylcholine is added. We have tested chloroguanide and two new antimalarials whose formulas contain quinoline and tertiary amino structures. The results are tabulated below.

Table II

Comments

Chloroguanide has an overall effect on cardiac arrhythmias, but it caused too high a frequency of gastrointestinal distress, usually severe enough to require discontinuance of therapy. Camoquin, the newest of the antimalarials (1946), has been used too little to permit the drawing of any conclusions regarding its possible clinical value. The most satisfactory of the antimalarials tested was chloroquine. This drug possesses evident therapeutic effect in cardiac arrhythmias (See Fig. 1, 2 and 3) and is generally well tolerated even in large doses. Camoquin was given only by mouth and only 6 out of 35 cases exhibited severe enough gastrointestinal upset (nausea and vomiting) to require discontinuance of the drug. It should be administered under careful clinical and electrocardiographic control.

Procaine Amide

It has been known for some time that procaine can reduce cardiac excitability and prevent epinephrine-cyclopropane syncope. Mark and his associates[12] have shown that the amide of procaine can be given orally because its absorption is complete and it is less toxic than procaine. In a previous study, Sanabria[13] demonstrated the usefulness of this drug, orally in serious arrhythmias of chronic Chagas' myocarditis, and also that its use in combination with digitalis makes possible the avoidance of aggravation of extrasystole in this disease, thus permitting digitalization of these patients. Procaine amide has been administered by mouth and by intravenous and intramuscular injection with the following results:

Table III

Comment

We have found that the potency of procaine amide given by mouth is about one-third that of quinidine; its only disadvantage was nausea and vomiting in some cases. Intravenous injection, as with quinidine, causes a fall in blood pressure; the drug should therefore be administered with the same precautions as quinidine. Advantages are its stability in solution, and the fact that it does not produce any upset if injected outside the vein.

Avacan

Pharmacologic and clinical studies[14, 15, 16] indicate that Avacan possesses a variety of actions: (a) mixed antispasmodic activity; it acts upon smooth muscle like papaverine, and is anticholinergic like atropine; (b) local anesthetic action like cocaine; and (c) increased coronary flow with improvement in anginal crises. These actions induced us to try the drug in arrhythmias, especially those occurring in coronary disease. We have had very limited experience with this preparation because of its scarcity at the present time.

In four cases of ventricular extrasystole associated with coronary disease, the intramuscular administration of 40 mg. three times a day stopped this arrhythmia in two cases and reduced it in one case.

Out of three cases of ventricular extrasystole due to chronic myocarditis, an oral dose of 0.15 Gm. three times a day diminished the extrasystoles considerably in one case.

Synthetic Antihistamines

These agents have structural formulas that include a tertiary amine. Dews and Graham[17] demonstrated that pyrilamine (Neo-antergan) is about twice as active as quinidine in prolonging the refractory period of the isolated auricle of the rabbit. In addition, it has weak local anesthetic action and spasmolytic effect, but no anticholinergic action. Diphenhydramine (Benadryl) appears to be useful for intravenous administration. We have found that it does not produce a fall in blood pressure, but rather a slight rise in both systolic and diastolic pressures. It should be of value in emergencies in which pressure is falling or may be expected to drop with other therapeutic procedures such as intravenous quinidine therapy.

Table IV
Comment

Diphenhydramine is of special interest because we have observed satisfactory responses to its intravenous use in cases of auricular fibrillation that were resistant to quinidine therapy.

Summary and Conclusions

We have tested various drugs clinically for their potential value in the treatment of arrhythmias. Despite the difficulties inherent in attempts to evaluate such drugs, it appears useful to broaden our therapeutic resources against these episodes. Thus we shall be able to draw upon newer therapies should the patient fail to respond to the older drugs, or should he exhibit adverse by-effects to such drugs. The foregoing studies appear to warrant the following conclusions:

1. Of the synthetic antimalarials tested, chloroquine has evident value when administered orally in the treatment of arrhythmias. It is potent and effective, and shows little toxicity, even on prolonged

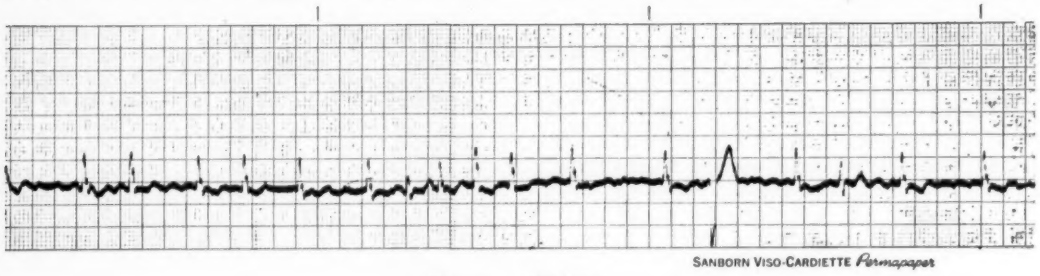


Figure 1 (Before)

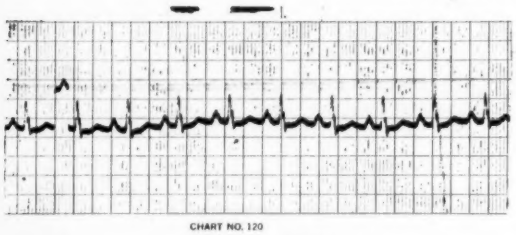


Figure 1 (After)

Fig. 1. Auricular Fibrillation; chloroquine therapy. ECG shows re-establishment of sinus rhythm.

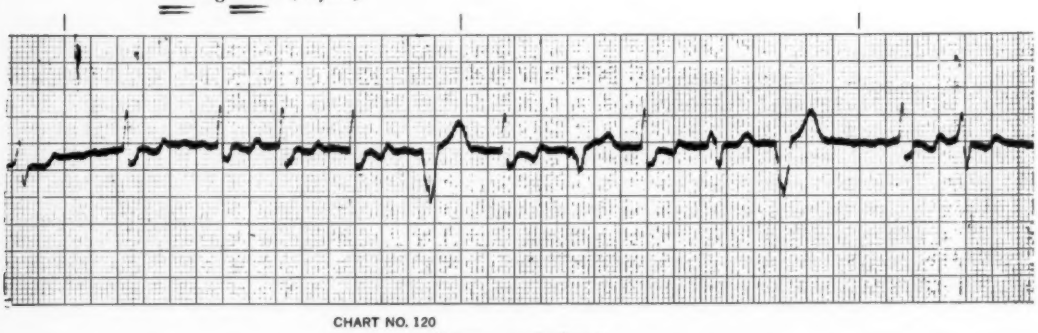


Figure 2 (Before)

Fig. 2. Ventricular Extrasystole; chloroquine therapy. ECG shows diminution of extrasystole.

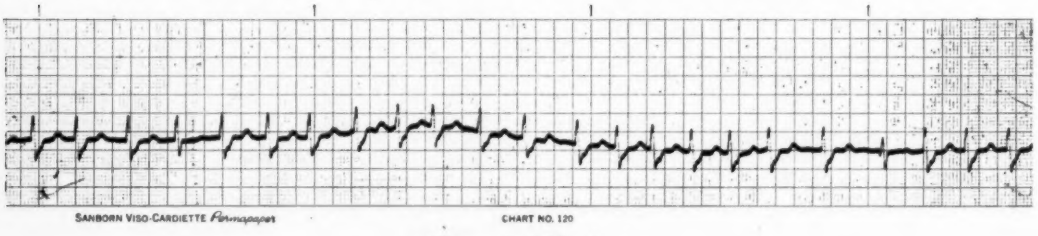


Figure 2 (After)

administration. Its only toxic effects were gastrointestinal upsets. Proguanil was also active, but its gastric intolerance was great. We have not had sufficient experience with Camoquin to form any conclusions.

2. Procaine amide, given both orally and intravenously, proved effective in the treatment of cardiac arrhythmias. The only toxic effects noted were nausea and vomiting on oral administration, and falling blood pressure on intravenous dosage.

3. Preliminary results suggest that Avacan may have value in extrasystole of coronary disease and in anginal pain. The number of cases studied were too few to permit more definite conclusions.

4. The synthetic antihistamines studies exhibited useful activity. Pyrilamine in a daily oral dose of 0.6 to 1.0 Gm. showed definite suppression of extrasystoles in a majority of cases. Diphenhydramine, given intravenously, proved effective in re-establishing sinus rhythm in auricular fibrillation, and in suppressing arrhythmias in supraventricular paroxysmal tachycardia. An advantage is seen in the absence of a hypotensive effect.

Thus, chloroquine, procaine amide and the antihistamines have shown definite favorable effects against arrhythmias. Time and additional clinical studies will be needed to establish more definitely their place in therapy of cardiac arrhythmias.

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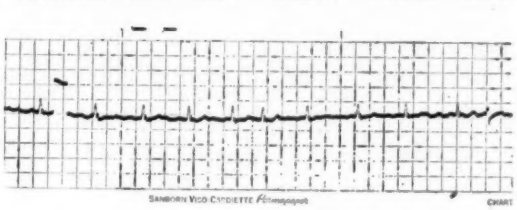

Figure 3 (Before)

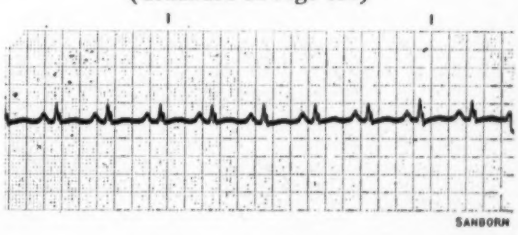

Figure 3 (After)

Fig. 3. Chloroquine therapy. Reappearance of fibrillation when treatment was suspended for four days; sinus rhythm re-established after resumption of treatment.

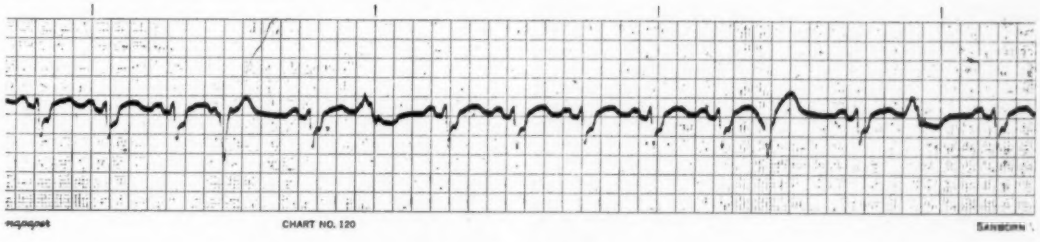

Figure 4 (Before)

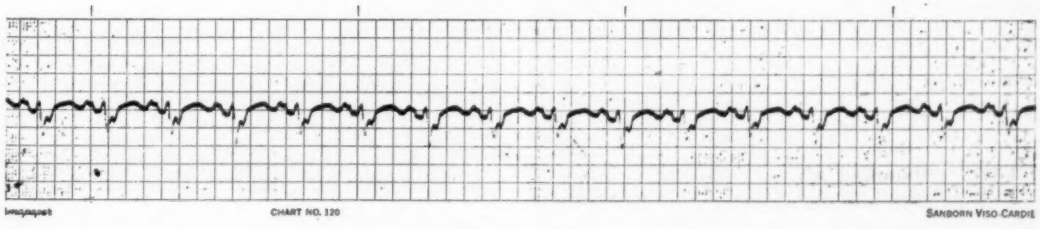

Figure 4 (After)

Ovarian Pregnancy: Report of a Case

By W. W. Daniel, M. D., and Gregory C. Smith, M. D., Phoenix
(From the Gynecology Department of the Maricopa County Hospital)

Ovarian pregnancy is a relatively rare complication of obstetrics, with the incidence estimated as from one in 25,000 to one in 40,000 normal gestations. There have been approximately 150 authenticated cases. The criteria set forth by Spiegelberg[2] for positive diagnosis of ovarian pregnancy are fulfilled in this case. They are:

1. The tube and its fimbria must be intact and the latter free from the fetal sac.
2. The fetal sac must occupy the normal position of the ovary.
3. The sac must be connected to the uterus by the ovarian ligament.
4. The wall of the sac must contain ovarian tissue.

Case Report

O. W., a 28-year-old Negro, Gravida IV, Para II, Aborta I, was first seen in the prenatal clinic on 8-25-54. She complained of sharp, colicky LLQ pain, accompanied by a scanty flow of bright red blood from her vagina, both of two day duration. Her last menstrual period had been on 2-27-54. This present episode was the fourth similar episode during this pregnancy. Each had been of two days duration, and in only one, in May, was the pain severe enough to force her to bed. No fetal movements were felt. Past history was essentially normal, with no serious illnesses or surgery. However, she had been treated elsewhere for pelvic inflammatory disease some eighteen months previously. Her last pregnancy had terminated in 1949, after a four month gestation, in spontaneous abortion.

Figure 1: Abdominal plate. X marks height of palpable mass.

Figure 2: Gross Specimen. The large sphere is the sac; the small mass is a portion of the fetus.

Menstrual history: Onset, age 12, 28 day interval, 3 day duration, using 3-4 pads daily. No abnormal catamenia.

Examination revealed the presence of a mass in the lower abdomen reaching 3/4 of the distance from the symphysis to the umbilicus. No FHT were heard. Diastasis recti with thick rectus muscles pre-

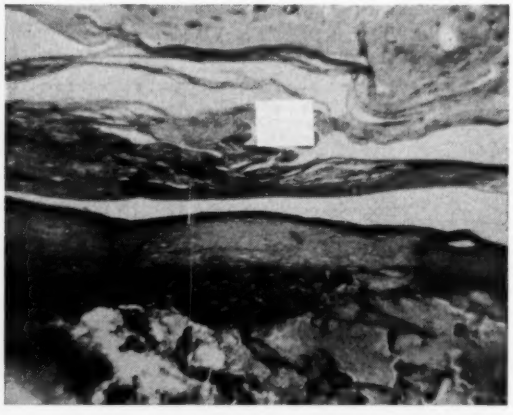

Figure 3: The wall of the sac showing chorionic villi and ovarian stroma.

cluded adequate abdominal examination when combined with moderate obesity.

Pelvic examination showed the presence of fresh blood on the vulva. The introitus was parous. The mass was in the midline and was apparently continuous with the softened cervix. The frog test was negative. An X-ray of the abdomen, with a radio opaque marker placed at the superior border of the abdominal mass, revealed an extra-uterine pregnancy.

Laparotomy

On 9-7-54, a laparotomy was performed, and the palpable mass was revealed to be the left ovary, enlarged to approximately 15 cm. in diameter, from whose superior border protruted a dead, partially mummified fetus. The fetal head was contained in the ovarian mass, with the remainder of the fetus lying along the right border of the vertebral column, with the breech subjacent to the gall bladder. The uterus was compressed into the cul-de-sac, and was softened and enlarged to about two times normal size. The ovarian mass was attached to a pedicle which included the ovarian ligament, and the Fallopian tube, whose fimbria was adherent to its external surface. The fimbriated end of the non affected side was also noted to be adherent to the surface of its ovary. The pedicle was clamped and the mass was removed in toto. The abdomen was closed in the usual manner, and the patient enjoyed an uneventful recovery, being discharged from the hospital on 9-19-54. She has remained well on subsequent follow up.

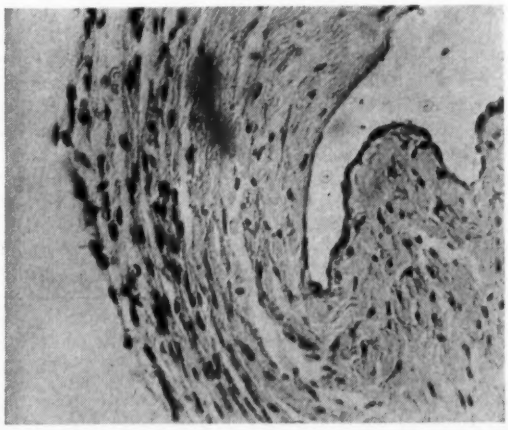

Figure 4: Enlargement of the ovarian stroma in Fig. 3.

Microscopic examination revealed the presence of both ovarian tissue and placental villi in the wall of the mass. The fetus measured 25 cm. heel to crown.

Comment

The finding of an intact Fallopian tube and a five month gestation indicates that this was probably a primary or intrafollicular gestation as differentiated from the secondary or extrafollicular type in which some maturation occurs prior in exta ovarian tissue.[3] Hertig has discredited the notion that temporary residence in the tube is essential for development of the ovum.[4] Perioophoritis was a gross finding on the non-affected side. This would lead one to give preference to the theory of the thickened ovarian tunica as an etiological factor in this case, rather than considering the presence of either Mullerian remnants or endometrial implants in the ovary.[5] No decidual cells were identified.

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Knowing About Health Insurance

(Continued from Page 465)

benefits, he contributes to economical and successful operation of the plans.

It has been stated at one of the Senate hearings that the acceptance of the plans by the public did more to counteract socialized medicine than any other single factor. That should make every physician an ally of the Blue Cross and Blue Shield. The two plans render a public service to the patient and also to the medical profession.

Anticonvulsant Drugs

(Continued from page 466)

patient who may be uncontrolled on the standard anticonvulsants. There is no indication for the use of a new drug in patients who are doing well on the standard medications.

Caution is urged in the use of these drugs and it should be noted that the toxic effects may occur very late: as for example, the blood dyscrasias following the use of Mesantoin and Tridione which may not occur until some months after therapy has been instituted. Careful follow up of patients with particular attention to dermatitis, blood changes, urinary changes, urobilinogen excretion may prevent such complications.

New Drugs in Therapy of Cardiac Arrhythmias

(Continued from Page 479)

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Adolescent Acne Vulgaris

(Hormone Therapy is Simple, Effective, Inexpensive and Treats the Cause of Adolescent Acne Vulgaris)

By Joseph B. Raddin, M. D., Phoenix

Physicians are constantly asked to treat acne vulgaris in adolescent girls and boys. Such requests should not be dismissed lightly with the admonition that the individual will soon "grow out of it." All too often this common form of acne persists for years with hideous cysts, scars, keloid formation, comedones and personality damage. Every physician should feel duty bound to treat acne in adolescent boys and girls.

There is sound reason to believe that adolescent acne is due to an endocrine imbalance, primarily a higher ratio of serum androgen to estrogen values than is usually considered normal.[1][2] Acne appears commonly in girls one or more years after the onset of menstruation.[3] Regular menstruation at adolescence is not necessarily proof of regular ovulation nor is it proof of a normal or elevated blood estrogen level. Irregular menses are common with beginning adolescence and are generally assumed to indicate failure of regular ovulation, hence an estrogen deficit is also implied.

Various Tests

Various tests can be made to determine whether or not ovulation has occured but are of little value to diagnose the cause of acne. The basal body temperature chart is indicative of ovulation, accurate and inexpensive but of no diagnostic value in acne. Hormone assays on serum or whole blood are necessary to determine actual androgen and estrogen blood levels. Since these assays are available to only a few physicians as research projects, laboratory confirmation of hormone levels in girls afflicted with acne is rarely possible. Most girls complaining of adolescent acne have other clinical evidence of female endocrine system imbalance.[4] A history of regular menstrual periods cannot deny nor can a history of irregular menses do more than support this hypothesis. A mild thyroid deficiency often present but unrecognized is aggravated by the increased demands of beginning ovarian activity and menstruation and should be considered the major factor causing the hormone imbalance evidenced as acne, menstrual irregularity and other adolescent complaints.

Onset of Adolescence

With the onset of adolescence the anterior pituitary normally begins increased secretion of follicle stimulating hormone (FSH) and leutinizing hormone (LH). FSH and LH stimulate the ovaries to begin ovulation which gradually leads to the mature ovarian function and regular menstruation expected in young women. When the ovaries respond well to FSH and LH stimulation, adequate amounts of estrogen and progesterone are produced by the ovaries. Such girls seldom have acne.

Before iodized salt was commonly available, adolescent girls frequently had some thyroid gland enlargement — the adolescent goiter of former years. Today when a young girl with acne is examined, an adolescent goiter is so rarely noted that the former common association of goiter with acne is often forgotten. It was known many years ago that small doses of potassium iodide and in recent years, thyroid extract would return the adolescent goiter to normal size and function.

Thyroid Extract

Thyroid extract has been reported by dermatologists as an effective prescription for acne.[5] Many menstrual irregularities, cramps, nervousness and other complaints are also improved.[6] [7] Long before hormone assays and basal metabolic rates were available, potassium iodide and thyroid extract were used empirically by many physicians to regulate menstrual flow as well as to control acne and goiter and to prevent dysmenorrhoea. The only new idea is that small dosage of thyroid extract does help stimulate normal ovarian function and can correct hormone imbalance in adolescent girls.

Medication with small doses of thyroid extract is now generally considered to be superior in effect to potassium iodide and has so proved to be in my experience.

It seems reasonable to suspect that with the increased anterior pituitary activity at adolescence an increase in ACTH stimulation of the adrenal cortex will occur. The one important source of androgens in women is probably the adrenal cortex. Since there will normally be an increased amount of androgen-like steroids present in the blood during adolescence due to increased adrenal function, unless ovarian function increases proportionately, the values of estrogen and progesterone as compared to androgens will be relatively less,

Estrogenic Hormones

Estrogenic hormones are also produced by the adrenal cortex and are the only source of estrogens in castrates of either sex. Progesterone apparently can also be produced by the adrenal cortex or metabolized from desoxy-cortico-sterone, one of the adrenal cortex hormones. Production of estrogens and progesterone by the adrenal cortex is often not adequate in amount to prevent acne and insure abundant health.

It has been my experience that most girls complaining of acne will also have menstrual irregularities and other adolescent annoyances such as dysmenorrhoea all of which can be very adequately treated by small stimulating doses of thyroid extract alone. Medication can generally be stopped in a

few months and cure expected. Thyroid extract should be considered basic therapy for these disturbances and usually is the only medication needed for cure. BMR tests are of little or no value to indicate need for thyroid therapy in acne. PBI tests showing TSH effect are very useful and should be used where available and the patient can afford the expense.[2] However, PBI tests are not indicative of need for thyroid extract in acne.

Empirical Use

If hormone assays are not available, empirical use of thyroid extract or Proloid tablets in gr. ½ dosage is safe and justified.[6] At times 0.1 mgm. daily of stilboestrol for a few months seems to promote more rapid improvement in chronic and severe cases. Gonadogen (Upjohn) is regularly helpful to regulate adolescent anterior pituitary function in those girls whose acne is severe and when mild hirsuitism is also present. Seldom is other therapy needed or desirable. Although other endocrine disturbances do occur which require special therapy, they are relatively uncommon during early adolescence.

Androgens Secreted

In boys, the androgens secreted by beginning testes activity increases the blood androgen level as compared to estrogen. Adolescent goiter is much less common in boys than in girls so thyroid dysfunction in boys is seldom suspected. The adrenals are another source of androgen as well as estrogen secretion in boys. There is evidence to show the testes also secrete estrogens in some quantity as well as androgens.[9] Unless there is congenital abscence of the testes, undescended testes which have become atrophic or castration has been performed, it has long been my clinical experience that thyroid extract will balance androgen — estrogen secretion in boys as well as girls. Abnormal under-function of the testes with inadequate testosterone secretion is not often associated with acne. Acne regularly appears when normal or excess androgen secretion is not balanced by estrogen secretion.[4] Just why small dosage of thyroid extract is able to stimulate the anterior pituitary, adrenal cortex, testes and thyroid endocrine system to normal balanced secretion thus preventing adolescent acne may not be adequately explained or this explanation accepted by physicians, but it is a clinical fact. Seldom is it necessary or desirable to use stilboestrol or Gonadogen in boys.[5]

Soap and Water

Soap and water cleaning of the skin of the face, neck and shoulders followed by liberal application of an alcoholic astringent lotion, such as the common after-shave preparations, is helpful. Cysts and blackheads must be removed manually when present, preferably after hot soap and water cleansing to soften the sebaceous material in the pores.

Creams, ointments and other therapy applied to the skin has not proved to be adequate therapy nor regularly beneficial in my experience and may safely be discontinued.

Good results are regularly obtained by many physicians with X-therapy to the skin of the face and shoulders. Undesired reactions and after effects are always a potential hazard. I have never found it necessary to use X-therapy for acne vulgaris.

Diet appears to have no part in the etiology of acne despite a long tradition to that effect. Growing adolescents need carbohydrates in balanced amounts to maintain weight and supply calories for abundant energy. Calorie requirements at this age are the greatest in the life of any individual. It is a fact of clinical experience that restricting sugars and starches from the diet is not alone regularly helpful in treating acne.

Therapy Available

Therapy to relieve the extensive and unsightly scar and keloid formation sometimes encountered is now available. This treatment is not for the acne and should not be started until the acne is quiescent and no new lesions have appeared for several weeks. Hydrocortisone ointment locally to the face and shoulders is often highly effective in reducing the amount of scar tissue and shrinking as well as decolorizing keloids of any size. Injections of aqueous hydrocortisone subcutaneously into the keloid is more rapidly effective and is used when only a few areas need therapy. CAUTION — hydrocortisone therapy is directed at the scar and keloid tissue caused by acne vulgaris. It is not therapy for acne.

Summary

The natural tendency of the endocrine changes beginning with adolescence to rapidly assume the proportions of mature adult activity explains why most adolescents never are afflicted with acne. In those youngsters whose endocrine balance is slow in attaining adult maturity, acne and other complaints peculiar to adolescence will appear. These complaints will be intermittent, of short or long duration depending on the rapidity with which balanced endocrine function is attained.

Diet has a very minor if any part in causing acne. Daily soap and water cleansing followed by a mild alcoholic lotion is sufficient treatment to the skin. Blackheads when present must be expressed manually. Subaceous cysts must be destroyed.

Thyroid extract in one half grain or one grain dosage daily is basic therapy for adolescent acne in girls and boys. Girls often improved more rapidly with 0.1 mgm, stilboestrol daily for a few weeks in addition to the thyroid. Gonadogen alone or in addition to thyroid and stilboestrol medication is regularly helpful in achieving cure. Hydrocortisone by ointment or injection is often valuable therapy to relieve unsightly residual scar and keloid tissue.

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(Continued on Page 486)

Errors in Differential Diagnosis, by Palpation, of Incomplete Hernia, Hydrocele, Varicocele and Undescended Testicle

By B. F. Jenness, M. D., Director of Health Service, Texas Western College, El Paso

For a long time I have been interested in the number of wrong diagnoses of the conditions enumerated in the heading of this article, made by undoubtedly competent examiners. The errors, without question, were made by hasty and incomplete examinations.

The inguinal canal, in health a potential canal only, may become a veritable tube containing intestine, varicosities, fluid from extension of the tunica vaginalis or an undescended testicle — not to mention lymphoid, lipoid and malignant tumors.

Perhaps the most frequent diagnostic error in this region, coming to my attention, has been the differential diagnosis of incomplete inguinal hernia and hydrocele. In congenital hydrocele fluid in the tunica vaginalis may be much or little, and may fluctuate in its amount, thereby causing differences in scrotal tension.

Visual Test

A large hydrocele should cause little trouble in diagnosis. One well known simple test is visual. It may be carried out by rolling paper into a tube and lifting the scrotum to good light, when the tumor will appear translucent if the tube is placed against the scrotal skin on one side, and the tube used as a telescope. A more powerful light may be used instead of daylight. Tapping the tumor may also send a wave of fluid causing an impulse against a finger placed at some little distance on the tumor.

The difficulty seems to be with smaller hydroceles by confusing them with hernia. A reliable test, but one which takes a few minutes to perform, is to place the patient in the supine position, knees flexed, and inserting the fore finger well up the inguinal canal, the patient is then told to stand erect, the examiner keeping the finger in the canal when and after the patient rises from the table. If the condition is a hernia, complete or incomplete, and was reduced by the supine position or gentle manipulation it will not descend in the canal — but if a hydrocele is present the swelling of the scrotum or of the lower part of the canal will remain.

Hurried Examination

One would not expect error to occur in diagnosis between varicocele and hernia, but several cases have come to my examining room stating that they had been told they had a hernia, or having such notation on their record. This error could occur only by hurried examination of the external genitals. When varicosities fill the scrotum and are present in the inguinal canal, an elongated venous thickening at and above the external inguinal ring might be mistaken for a descending hernia — but only if the examination was made without exposing the scrotum.

The same error, and for the same reason, may, and does occur in the diagnosis between hernia and undescended testicle, for I have seen several cases. Of course when looking for a hernia the examiner should palpate the *scrotum first* to find out if the hernia might have become a complete one. But it seems evident from my experience that, in a hurried inspection and palpation for incomplete hernia, the examination may consist only of a finger in the canal and a brisk cough from the patient, *without even exposing the entire genital organs and palpating the scrotum to ascertain if any testicle is present there.*

In such a case the "lump in the groin" is found, and on coughing the contraction of the abdominal muscles which surround the canal may slightly move the testicle, giving the sensation to the examining finger of a hernia impulse.

Careful Palpation

Atrophy of the testicle also may cause confusion in diagnosis. I recently had such a case. On first examination I could not find the testicle in the scrotum. I therefore concluded it was undescended. I soon found, however, that the inguinal canal was free, and in a more careful palpation of the scrotum I felt the atrophied gland, which was so small as to almost escape detection.

Perhaps the most confusing of all is the elusive testicle which in patients with sensitive reflexes may be drawn up by the cremaster muscle tight against the external inguinal ring, or even into the canal through a very relaxed ring. This condition may simulate an incomplete inguinal hernia, and in a hasty inspection be misleading.

Orchitis is another condition which requires careful consideration. If the testicle is considerably swollen, hernia and hydrocele must be ruled out by further examination, and tenderness of the organ calls for careful inspection for gonorrhea, history of recent mumps, or trauma.

Careful History

Large inguinal glands have been mistaken for incomplete inguinal hernia, and demand a careful history from the patient.

Haematoma of the scrotum may have the consistency of a hydrocele, but discoloration from contusion should settle the question, although a case of scrotal contusion and orchitis from falling astride the parallel bars in the gymnasium recently came to

(Continued on Page 491)

BOOKS

Three Medical Volumes Reviewed

By Jack C. Postlewaite, M. D., El Paso

PROCTOLOGIC ANATOMY

Second Edition

By R. V. Gorsch, A. B., M. D., F. I. C. S., F. A. P. S., D. A. B. P.

Clinical Professor of Proctology, New York Polyclinic Medical School and Hospital

The Williams & Wilkins Co. — Baltimore, 1955

Fundamental details of proctological and perinopelvic anatomy, prepared by a super specialist, are presented in a rather brief review, totaling 301 pages. Considerable reference is made to specialized, technical and statistical medical literature to emphasize the importance of this study. One can feel only as the author does that the review of this book would prevent the neophyte surgeon from entering into the proctology specialty without a basic knowledge of the histopathology and perineopelvic surgical anatomy.

We find multiple technical drawings made clear by concise and descriptive prose. Unfortunately practically no actual color photography is available, which is a shortcoming of the entire American literature and not peculiar to this book. One is amazed at the far reaching technical problems of the proctologist and one now realizes the limitations, histologically and anatomically, of the average surgeon because of insufficient background study. Special time must be alloted for such chapters as — The Anorectal Musculature, The Anal Canal, The Pelvic Fascia, and The Perineopelvic Spaces.

All Practical

All chapters are made practical for the proctological specialist, as well as the student of medicine, without sacrificing completeness or interest. The occasional comment with regard to functional disturbances of the rectum and sigmoid colon are correlated with the problems of relaxation of the pelvic diaphragm, of rectocele and cystocele, of the adnexal and uterus displacements. Endoscopic and other diagnostic considerations are related to fascial plains and localized tissue histology. It is improbable that good cancer surgery could be anticipated without knowing the partitions and spaces of the peritoneum and pelvis. Efforts at simplifying confusing terminology in the anatomical descriptions is of real interest. There are indispensable considerations of the dynamic mechanisms of the pelvic fascia related to functional and organic disease. Details of the lymph and venous pathways make the concept of radical rectal surgery within the grasp of all readers. Problems as complex as referred pain, gastro-duodenal spasticity, spastic colitis, constipation, anal spasm and autonomic system imbalance manifested by diarrhea are considered with only brief reference to constructive management.

One wishes the book were double in size, balancing the surgical and anatomical presentation with chapters on etiology, pathogenesis and medical treatment. However, little dry statistical material is presented to belabor the reader and the book would do well in the library of all surgeons working in the pelvic and perioneal regions.

THE MEDICAL SIGNIFICANCE OF ANXIETY

By Richard L. Jenkins, M. D.,

Chief, Psychiatric Research, Psychiatry and Neurology Service

Veterans Administration, Washington 25, D. C.

Published by — The Biological Sciences Foundation, Ltd. Washington 7, D. C. — Price $1.00

Great admiration for a specialty writer in the field of psychiatry who reviews the subject of "Anxiety" in 46 pages must be felt. Particularly when one remembers that the entire field of psychiatric literature is impeded by unintelligible language jargon and a contemporary Freudian mysticism.

One can for the first time sense, if not actually grasp and interpret, the vague problems of anxiety presented by our office patients. The tension with rather severe organic manifestations can be more easily recognized. Subtle unsolved patient conflicts need not discourage the practitioner from attempting to alleviate the stress syndrome under observation. What appears to be confusing stages of anxiety often are manifested by functional illness and represent secondary gain. The alcoholic, the schizophrenic and the hysterical patient show anxious pre-occupation with conflicts precipitating these major chronic emotional problems. Each office consultation requires a careful history and examination with an inquiry and evaluation of the anxiety present. A vocabulary of familiar words with leading questions, such as — "are you tense," and "do you worry," can easily open the door of diagnosis and treatment.

Keys To Therapy

The patient acceptance of an illness, and the responsible reassurance by the physician are the keys to therapy. Medications used to control the stress mechanism must be chosen with care. Sedatives are over used for the anxiety sufferers. Chlorpromazine and Reserpine may be contra-indicated because of rather serious side effects.

1. The calm, understanding, emotional support of the physician, 2. the knowledge that management or

amelioration of the problem is possible, and 3. the security of knowing that a patient's physician is available are practical devices in patient anxiety control. The psychiatric consultation is rarely needed unless major psychosis is uncovered in the anxious patient. Characteristically, anxiety is presented in the form of apprehension without a precise knowledge of the disaster anticipated and is almost always a response to an internal threat of the integrity of the mind. The autonomous state of individual human behavior is towards an effective homeostasis. The conflict of decision versus indecision must be resolved. The neural-humoral systems and their response to stimuli or stress are problems of the future.

Such monographs of the psychiatric problems and thinking can help to promote better diagnosis and more scientific therapy for the neglected nervous patient. Each doctor's library would be improved by having these publications as they arrive.

TRANSPLANTATION OF TISSUES – VOL. I – CARTILAGE, BONE, FASCIA, TENDON, MUSCLE

By Lyndon A. Peer, M. D. — Clinical & Research Director, Rehabilitation Center for Plastic & Reconstructive Surgery, St. Barnabas Hospital, Newark, New Jersey

The Williams & Wilkins Company, Baltimore, 1955, Price $13.50

This is a highly specialized and technical presentation of voluminous reference material with obvious extensive personal research in the fundamentals of tissue transplantation. One is impressed with the basic tissue histology and physiology presented and amazed that such a "de novo" science has roots of clinical experimentation throughout the past two centuries. The problems of cell survival and cell replacement are beautifully reviewed.

"The biological evolution of cells seems to favor the development of single forms into more and more complex structures." And thus, parallel research in viral, genetic and immunologic studies have given great impetus to the problem of tissue transplant. Cell differentiation, ageing, and death give evidence of a humoral environment of growth promoting and growth inhibitory substances. Such chemical reactions, however, have continued to elude the research histologists. Specialized tissue is proportional to the intracellular substance differentiation.

Adverse Effects

The shifting from amorphous to fibrous intracellular substances is revealed in ageing and adversely affects diffusion from capillaries to cells and vice versa. Tissue culture techniques, supravital dyes, fixation by freezing and drying, transparent widows, the phase microscope, the dissecting microscope have contributed in tissue research to fill in the gaps of plastic surgery.

The latter chapters of this momentous review are given to the theoretical and practical considerations of transplantation of specialized tissue. The conversion of undifferentiated mesenchymal cells and their relationship to graft survival and replacement is considered. It is known that the host tissue cells gradually infiltrate the graft and replace the original cells and the intracellular substance. Such replacement by the host tissue infiltrates often resembles the original tissue transplanted. This is termed "the creeping substitution." Thus, the cell population shows evidence of being replaced by the host tissue in kind and the host cells giving rise to a counterfeit model which is a duplicate of the original transplant.

Cell Survival Theory

The cell survival theory proposes that the cells of free autogenous grafts tend to survive and retain their favorable transplantation sites. Thus, when the cells in free grafts fail to survive, the graft is replaced by connected tissue and this replacement is not a duplicate of the original graft. The available evidence would indicate that all free grafts conform to the cell survival theory and not to the host tissue replacement theory. The behavior of human tissue grafts emphasizes the tenacious and usually successful effort of cells to survive and retain their specific tissue structure. Thus, the graft "take" should be the rule and not the exception.

This is an extensive and distinguishing review by Dr. Peer which has required a lifetime of work. It is Dr. Peer's hope to add several volumes to this work presenting many of the pre-clinical and clinical problems of plastic surgery. Considerable study would be necessary to understand entirely the reference material given in this volume. However, it is entirely possible to finish this volume with a working knowledge of the tissue cell and the tissue transplant. Particular interest by groups in teaching institutions, practicing plastic surgeons, histologists and the pathologist can be predicted and reference libraries should make it available on request for the rest of us.

Adolescent Acne Vulgaris

(Continued from Page 483)

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MONTHLY CLINICAL PATHOLOGICAL CONFERENCE
EL PASO GENERAL HOSPITAL

AUGUST 18, 1955

FREDERICK P. BORNSTEIN, M. D., EDITOR — CASE NO. A-470
PRESENTATION OF CASE BY DR. JACK POSTLEWAITE

History:

Dr. M. Nathan Kleban:

This 69 year old Latin American widowed housewife entered El Paso General Hospital for the second time on May 24, 1955, in coma.

One month before her first admission on January 31, 1955, the patient noticed in her left axillary region a "sore," a specimen of which was removed for biopsy in Surgery Clinic after she was seen in the Tumor Clinic. The patient was admitted to the Tuberculosis Ward with a diagnosis of granuloma, type unknown, possibly tuberculous. The patient was previously well except for poor vision and slight ankle edema. Seven years earlier her husband had died of tuberculosis.

On physical examination, the temperature was 102.4, pulse 100, respiration 28, and blood pressure 170/65. There was a granuloma low in the left axilla. The right lens appeared opaque. A few remaining teeth were in poor condition. Scattered rales were heard over the lung fields. The left border of cardiac dullness was percussed near the anterior axillary line. The rhythm was sinus with occasional premature systole. No murmur was heard. There were no positive abdominal findings. Mild ankle edema was present. Pelvic on 16th hospital day: "Foul exudate. There is a large pelvic mass which extends to the umbilicus and almost fills the pelvis."

Hospital Course

Hospital course (first admission): diarrhea, present on admission, consisting of many soft and watery stools, was treated with Kaopectate, paregoric, sulfaguanidine, and cremosuxidine and subsided by the 10th hospital day. Three units of blood were given because of the anemia. On the 12th hospital day a thoracentesis was attempted through the 7th intercostal space in the posterior axillary line (side not specified), but no fluid was obtained. Gantrisin, one gram q. i. d., was given starting on the 16th hospital day and was continued until discharge. On the same day, massive edema of the right leg extending to the groin with warmth but no pain was noted, and treated with elevation starting two days later. The patient was transferred to the surgical ward. Chloromycetin was begun on the 27th day. After the first several days there was only low grade fever, but it rose above 98.6 only once during the last three days. The patient ate well and felt "peppy" during the last week or two. Condition of the leg was not recorded at the time of discharge on March 3, 1955. The patient was to be followed in Tumor Clinic.

The recorded interval history at the time of readmission on May 24, 1955, was sparse. Swelling of the right leg receded, but anorexia developed, and the patient lost fifty pounds. The skin broke down over pressure points. Jaundice was observed. Because she lapsed into coma the patient was brought back to the hospital.

Second Admission

Hospital course (second admission): on admission, the patient was unresponsive to painful stimuli and was deeply jaundiced. Temperature 98.4. Pulse 86. Respiration 24. Blood pressure 94/50. There were decubitus ulcers. No additional physical findings were recorded. The patient was given 1000 cc. 5 per cent glucose/D.W. i-v and 500 cc. of the same fluid subcutaneously. The urine was described as dark brown and foul-smelling. She was able to take a few sips of tomato juice. On the day following admission, the patient moaned and complained of pain in her arms. There was vomiting of a pink liquid material. Foul-smelling dark blood was noted on the vulva or rectum, and a thick bloody discharge from the vagina or bladder. There was slight edema. Respirations became irregular and labored. Temperature 96.4 (R). Pulse 72. Respiration 24. Heart beat and respirations ceased 24 hours after admission.

Laboratory findings:

February 1, 1955: Hb. 5.6 gms.; RBC 2.94; Hematocrit 23; WBC 15,250; Segs 90, stabs 4, lymphs 6.

February 3, Kline exclusion negative. Urine: amber, acid, S. G. q. n. s., albumin trace, WBC 35-40/HPF, RBC 3-4/HPF (Cath. specimen).

February 5, Hb. 12.4 (after 3 units blood).

February 7, Urine: yellow, acid, S. G. q. n. s., albumin 1+, sugar negative, acetone negative, WBC loaded/HPF, RBC none.

February 25, Culture of cervical swab: gram positive cocci, gram negative bacilli, gram negative diplococci.

February 28, Hb. 9.7; RBC 3.29; WBC 6500; Segs 66, lymphs 27, basos 1, eos. 6.

May 24, Hb. 9.9; RBC 2.94; WBC 11,000; Segs 89; lymphs 10, monos 1.

May 25, BUN 46; icterus index 95.2; serum bilirubin, direct 12.4; indirect 15.1.

Tissue report:

January 17, 1955: "The section shows a piece of skin. The epidermis is intact. Beneath the epidermis there is a severe inflammatory process characterized by small nodules with a number of Langhans giant cells, lymphocytes, and plasma cells. Minimal necrosis is present. Special stains reveal the presence of small fungus spores within the tissue. These are found to be especially close to Langhans giant cells. In view of the smallness of the spores, histoplasmosis should be considered."

Skin tests with tuberculin, histoplasmin, and coccidioidin during the first hospital admission were negative.

X-rays:

January 31, 1955: Chest: "Changes consistent with pulmonary congestion secondary to cardiac decompensation."

February 12, 1955: Barium enema: "Findings consistent with straightening of the sigmoid colon secondary to extrinsic pelvic mass. Findings consistent with calculous cholecystitis. Changes in the mucosal pattern consistent with a colitis."

February 19, KUB: "Findings consistent with soft tissue mass in pelvis."

Dr. Bornstein:

Before we start the clinical discussion, I would like to mention an additional finding at the physical examination, namely that the fistulous tract present at the first examination had completely healed and that instead there was a well-healed depressed scar on the left side of the thorax in the region of the 5th rib. A photograph of the biopsy taken on January 17th shows a granulomatous process with little necrosis, Langhans giant cells, and numerous fungus spores. These spores are extremely tiny which suggests histoplasmosis. However, we were not able to demonstrate any organisms in culture, and, in addition, on one slide a large capsule surrounded the small spores so that we cannot rule out coccidioidomycosis. We therefore should limit the diagnosis to the statement that this is a granuloma caused by fungi without being too specific about the type of fungi present.

X-ray Findings

Dr. Charles McVaugh:

On the first examination we see the left costophrenic angle obliterated by thickened pleura and probably some fluid. There appears to be some left ventricular hypertrophy as seen in both views and there is also a slight increase in the pulmonary markings in the right costo-phrenic angle. There is also a generalized increase in the pulmonary vascular shadows and these findings may all be due to a pulmonary congestion. The findings in the right base are consistent with a virus or a typical-type pneumonia. The changes in the left base in view of the increased vascularity of the lungs could be due to an infarction.

In the presence of a pulmonary congestion secondary to cardiac decompensation, usually the right base develops pleural effusion before the left; however, that is not always so, but in view of the fact that there is fluid in the left base and none in the right the changes in the left base could be caused by an infarction rather than by a pulmonary congestion with pleural effusion. Subsequent examination of January 17th reveals some clearing of both lung fields.

There is an actual decrease in the pulmonary vascularity but no significant change in the findings of the left base, and I believe this in all probability is due more to old pleural changes than very much fluid. The contour of the shadow, the concavity of it, is more suggestive of pleural thickening than of a very large amount of fluid. At this time we note the catheter extending into the soft tissue in the chest. I presume that this is where the excisional biopsy of the draining sinus was made. In view of the history of the granulomatous lesion of the chest wall, you would suspect a possible pulmonary infection or granulomatous disease of the lungs.

No Definite Evidence

I see no definite evidence of it. There are old calcified glands of both hilar areas, but I see no evidence of an active pulmonary infection as you might see with tuberculosis or one of the fungus diseases. I see no evidence indicating pulmonary metastases which might account for changes in the left base. On the 12th of February, there was a barium enema which reveals no evidence of an intrinsic lesion of the colon. There is some upper displacement of the sigmoid loop instead of the normal curvature. It does arise directly out of the pelvis. Occasionally this occurs normally, but here in this particular case it may be due to a pelvic mass as there is some haziness in the pelvic area.

There is a large calcification in the right upper quadrant in the usual location of the gallbladder. It resembles a large gallstone. I see no evidence of metastases. Survey films of the abdomen on the 19th of February reveal no evidence of an intestinal obstruction. There is a large poorly-defined shadow filling the entire pelvis and rising up as high as the top of the sacrum or of the 5th lumbar vertebra. It's ill-defined and it may be an enlarged uterus or tumor. The upper abdomen appears clear. I do not get the impression that there is fluid in the abdomen at this time; rather that this is an indefinite mass in the pelvis rather than an ascites. In view of the history, a tuberculous peritonitis or tuberculous endometritis or even fungus infection involving the genito-urinary tract is possible.

Chest X-rays

The chest X-rays and barium enema of the flat plate of the abdomen reveal no specific lead to the diagnosis which might conform with the known biopsy of the fungus infection in the chest wall. The positive findings are the pleural involvement of the left lower chest, some cardiac enlargement with evidence of pulmonary congestion, a palpable soft tissue mass in the lower abdomen and bony pelvis with no evidence of malignancy or metastases to the visible skeletal structures or the lungs, and a cholelithiasis.

Differential Diagnosis

Dr. Jack Postlewaite:

Somehow, we in the medical profession have never come to use the full-body film as do the chiropractors. I'm inclined to use all the advantageous methods that can be used in diagnosing this case.

First, the diagnosis was obviously histoplasmosis. We are going to discuss histoplasmosis toinght. Secondly, I expected the X-ray man to show us the carcinoma metastases. This lady is in the carcinoma age. She lived and died a carcinoma death. That should be the diagnosis but we can throw that out because the X-ray man didn't see it. We're able to see that every organ in this body is involved, but that's reasonable. She's 69 years old, and she died a rather prolonged, slow, smouldering death with anemia being an outstanding finding. So there obviously should be bone changes of anemia which the X-ray man should have told us about. Well, certainly she had more than anemia. She had weight loss which doesn't seem too apparent on these films, and she had an enlarged heart which may be a reflection of anemia but another problem comes to mind. I think I see calcium. So she has arteriosclerotic heart disease which may or may not be secondary to a degenerative process or perhaps some valvular lesion, or perhaps lastly hypertension.

Lungs Involved

Furthermore, we see the lungs are involved, and here is where the mystery of the case has left us. We had a description of histoplasmosis. Now the spore of histoplasmosis is just as characteristic as is the identification of a leukemia cell. On the projected slide we saw giant cells which may be nothing but foreign body giant cells with vacuolations, and we saw fungus spores. Now we're forced to talk about giant cells. Presumably, giant cells can be seen in most of the granulomatous diseases so we must consider the etiologic problems of the fungi. Tuberculosis shouldn't be left out. Other granulomatous processes are seen in the spirochetal diseases and, last but not least, one must consider some of the intermediary diseases between malignancy and infection, and Hodgkins' is an outstanding example of this. We have, however, identified an organism. If this isn't just an incidental finding, a red herring, we are faced with a fungus infection in which histoplasma should be discussed. Sporotrichosis doesn't do this; at least, we don't see it much in this area. It's usually a skin disease. It's usually limited to certain occupations.

Coccidioidomycosis

Coccidioidomycosis is endemic in this area and we do see cases of the fulminating type; it occurs about once in 1,000 cases of coccidioidomycosis which we see clinically. They die of this disease usually of meningitis, but the disseminated form is not unlike that of disseminated tuberculosis or disseminated histoplasmosis. Histoplasmosis can be identified in cultures. The one outstanding characteristic of histoplasmosis cultures is the serrated edge, and thus it looks very much like the cog-wheel of a watch, having a serration on the edge much different from the smooth edge of the spore of coccidioidomycosis.

The next organ that we see involved is the liver. She died terminally of jaundice. One can't explain this specifically unless it was metastasis or unless it's a granulomatous involvement with obstruction of the hepatic system. She was jaundiced and she died very shortly thereafter.

She had received multiple transfusions and one wonders if this was hypersplenism, whether this is a terminal form of splenic anemia, or whether this is just hemolytic jaundice which occurs in many very sick patients. We have then the renal system involved. One must pay attention to the kidneys inasmuch as there are on catheterized specimens positive urine findings of blood, pus, and albumin. One is inclined to wonder then if the kidney is the source of a neoplastic process and if we are dealing with a disease here that could have been investigated further by a more exacting X-ray technique.

Speculation

This not having been done, we must speculate. I'm inclined to believe that in the terminal situation we have a biochemical depression of renal function. Next, the genital organs: and here I must remind all of us that the most common neoplastic processes in the female are palpable and diagnosable on early examination. Seventy-eight per cent of the neoplastic processes of the female are diagnosable on physical examination.

So one would not want to overlook this mass and would like more information with regard to Papanicolaou's study, biopsy if possible, etc. The final symptom of importance to me was diarrhea; thus, the gastro-intestinal system could perhaps have been further investigated in an upper G. I. examination. We'd like to know if a mass was fixed in the system. It would be of importance if biopsy were possible.

Etiological Processes

Now to take up etiological processes: neoplasm seems the obvious probability by virtue of the multiplicity of involvements, the anemia, the discharges that were noted coming from vulva, rectum, vagina, and bladder. It also fits the terminal clinical mani-

festations of the illness. Thus, malignancy of all of these organs is certainly possible if not probable, metastasis being the terminal situation. That would make the chest biopsy a red herring. It would mean that we have two diseases. The biopsy findings are of secondary importance and not related to the patient's death.

The second possibility concerns the diseases causing granulomatous tissue response and giant cell formation. We mentioned the bacterial type and the neoplastic type (Hodgkins' being outstanding). Metabolic and degenerative diseases do not give the granulomatous response in tissue.

Final Remarks

The final remarks should be directed towards the terminal biochemical situation. She developed jaundice; she developed renal disease. I feel that the anemia must have continued or persisted in spite of transfusion. One wonders if she didn't develop an acidosis, if there wasn't lactic acid accumulation, if the electrolytes didn't change accordingly, and whether she died in a terminal state of uremia, renal shutdown, and hepatic insufficiency. I believe that we are dealing with a neoplastic process. First, a carcinoma is statistically more probable; Hodgkins' must be thought of. The obvious diagnosis from the protocol, if it is not a red herring, is histoplasmosis. Now histoplasmosis is a disease that is very uncommon in our clinical work in this area. I believe it's uncommon because, first, we don't look for it first and because we don't have a high mortality rate in this area from it; thus we don't see these cases here. But people come into the area from the Mississippi valley, Ohio valley, and Tennessee valley, and bring this disease to us. Chances are good they'll be benign cases. The disseminated form is rare; the deaths are now numbering into the hundreds; whereas, when Darling described it, he described it with very few cases, one or two in the Panama district.

Original Cultural Technique

There was a professor of mine who did the original cultural technique in Goodpasture's laboratory in 1934 and the clinical work. Less than eight or 10 years ago we had 88 cases. There are many more added to this by the group at Vanderbilt. Histoplasmosis is a fungus disease. It is very difficult to diagnose but is characterized clinically by anemia, emaciation, lymph adenopathy, splenomegaly, and hepatomegaly. The biopsy is the diagnosis. It is difficult to obtain a positive secretion or sputum as it is in coccidioidomycosis. The pathology is a generalized dissemination of fungus in spore form and tissue involvement with granulomatous response. Death is very rapid in the case of the disseminated disease. The fatal cases are characterized by their emaciation, anemia, and rapid downfall.

Dr. Joe C. Carter:

The jaundice could perhaps be explained as a homologous serum jaundice, or a hepatic jaundice from the transfusion, or perhaps from a carcinoma of the pancreas.

A Physician:

I was going to ask Dr. Postlewaite why he dismissed the possibility of this being a bacterial granuloma like tularemia, for example.

Dr. Bornstein:

May I be permitted to answer the question for Dr. Postlewaite? Firstly, we found a convincing etiological agent on the slides, namely, a fungus. Secondly, the histological picture is not compatible with tularemia because in tularemia we have few giant cells and large sharply-demarcated areas of caseation necrosis.

Clinical Diagnosis:

1. Generalized histoplasmosis.

Dr. Postlewaite's Diagnosis:

1. Generalized carcinomatosis.
2. Histoplasmosis.

Anatomical Diagnosis:

1. Adenocarcinoma of the gallbladder with direct extension to the liver and metastases to the liver parenchyma and regional lymph nodes.
2. Complete obstruction of the common bile duct by tumor.
3. Icterus.
4. Duodenal ulcer.
5. Chronic pyelonephritis.
6. Caseating fistulous tract, left pleura.
7. Caseation lymphadenitis, minimal.

Pathological Discussion

Dr. Bornstein:

On autopsy, the following observations were made: the body was that of an elderly fairly well nourished woman who was severely jaundiced. In the region of the 5th rib on the left side there was a well-healed small surgical scar. No sinus tract was noted. Upon opening the thorax, there was marked thickening of the pleura. Within the thickened pleura on the left side there was a small focus of caseation necrosis. The findings in the abdomen centered around the liver and gallbladder. The gallbadder was distended and on opening contained a large stone. All of the gallbladder adjacent to the liver bed was tremendously thickened and a tumor was seen which grew directly into the liver parenchyma producing a grayish-white nodule on the liver surface which measured 4 cm. in greatest diameter.

Complete Obstruction

In addition, the tumor grew infiltrating along the wall of the gallbladder into the common duct and produced a complete obstruction of the common duct.

Additional findings consisted of an unrelated duodenal ulcer and some caseated lymph nodes in the retroperitoneal space. In addition, both kidneys showed a necrotizing inflammation of the renal pelvis which extended into the ureters. On microscopic examination, the tumor was a typical adenocarcinoma arising in the biliary system. The retroperitoneal lymph nodes and the necrotic area in the pleura showed caseation necrosis but no organisms were demonstrable.

Two Diseases

It is obvious that we are dealing with at least two diseases: firstly, a fungus infection which by the time of autopsy had nearly burned itself out and was of no clinical importance, secondly, a carcinoma of the gallbladder which by obstruction was mainly responsible for the death of the patient. The renal damage should be considered a contributory cause. Carcinomas of the gallbladder in general have a highly unfavorable prognosis. They grow and develop rapidly. It is quite probable that the carcinoma was not even present when the patient first was seen with her fistulous tract. As is commonly the case, the carcinoma appeared in a middle-aged woman who had a cholelithiasis of long standing.

Third Consecutive Case

This is the third consecutive clinical pathological conference in which we have presented a carcinoma appearing in a patient who suffered from another disease for a considerable length of time. I think these cases illustrate the bizarre and unpredictable behavior of carcinomas and should stimulate us to have the courage of making two separate diagnoses when the evidence is such that we cannot account for all the clinical symptoms by ascribing them to one disease. These three consecutive cases of malignancies superimposed upon a preexisting active disease have been encountered during a relatively short span of time. I am mentioning this to emphasize again that we have not picked something rare and unusual but have tried to present a problem which may be encountered in daily practice.

Colonel Stapp of Alamogordo Featured on Cover of Time

Lt. Col. John Paul Stapp, Air Force surgeon, who is in charge of the Aero-Medical Field Laboratory at Holloman Air Force Base near Alamogordo, N. M., was featured in the Sept. 12 issue of TIME magazine.

Born in Brazil, the son of an American missionary, Col. Stapp received his M. D. from the University of Minnesota Medical School and has been engaged in rocket-sled research for the Air Force since shortly after the end of World War II. He is the brother of Dr. Celso C. Stapp of El Paso, president of the Southwest Obstetrical and Gynecological Society.

Commenting on Col. Stapp's current research, TIME magazine said:

". . . he is getting ready to prove his carefully calculated theory that a jet pilot can stand the wind blast of a bail-out . . . at 40,000 ft. . . . provided he is properly helmeted and harnessed tightly to an ejection seat. If Space Surgeon Stapp is right, military aircraft operating at that speed and altitude will not need complex and costly ejection capsules to protect escaping pilots. The saving in weight will greatly increase the planes' performance, make them deadlier fighters, give their pilots a greater chance to survive a war in the air and furnish invaluable data for future space flight."

Errors in Differential Diagnosis . . . . . .

(Continued from Page 484)

my attention, and while aspiration was not done, I felt sure that a bloody fluid filled the tunica vaginalis causing a traumatic hydrocele. The case made an uneventful recovery in a month.

I have always felt that the scrotum was a neglected area in hurried physical inspections, and that it would bear sharper scrutiny, and more careful palpation. The undue modesty of some patients, however, and the evident embarrassment caused them by a thorough inspection of the genitals undoubtedly influences the examiner, and tends to lessen the efficiency of these examinations.

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